ORDER NO. EMID911354
A4

Service Manual

Electronic Organ

SX-EN1

(M), (MC), (XM), (EN), (EH), (EF), (EZ), (EW),
(EA), (EP), (EK), (XL), (XR), (XS), (XD), (X)

AREAS

(M): U.S.A.
(MC): Canada
(XM): Mexico
(EN): Norway, Sweden, Denmark, Finland
(EH): Holland
(EF): France, Italy, Belgium
(EZ): Germany
(EW): Switzerland
(EA): Austria
(EP): Spain, Portugal, Greece
(EK): the United Kingdom
(XL): New Zealand
(XR): Australia
(XS): Malaysia, Singapore, South Africa
(XD): Saudi Arabia, Kuwait
(X): the Middle East, Indonesia, Hong Kong, the Philippines, Thailand, Taiwan

■ Specifications

KEYBOARD			UPPER KEYBOARD 44 KEYS LOWER KEYBOARD 44 KEYS PEDAL KEYBOARD 13 KEYS
SOUND GENERATOR			PCM
MAXIMUM NUMBER OF NOTES PRODUCED SIMULTANEOUSLY			32 NOTES (NUMBER OF NOTES WHICH CAN BE INPUT SIMULTANEOUSLY: UPPER KEYBOARD 8 NOTES, LOWER KEYBOARD 8 NOTES, PEDAL KEYBOARD 1 NOTE)
SOUNDS	PARTS		UPPER KEYBOARD: TAB & ORGAN, POLY, SOLO LOWER KEYBOARD: TAB & ORGAN, POLY
	UPPER	POLY, SOLO	10 SOUNDS PIANO, ELECTRIC PIANO, HARPSICHORD, GUITAR, JAZZ GUITAR, BRASS, SAX, CLARINET, FLUTE, STRINGS
		TAB	FLUTE 16', 8', 4', 2' PERC 2-2/3'
		ORGAN	1~5
	LOWER	POLY	8 SOUNDS PIANO, ELECTRIC PIANO, HARPSICHORD, GUITAR, BRASS, SAX, ACCORDION, STRINGS
		TAB	FLUTE 8', 4', 2'
		ORGAN	ORGAN
	BASS		4 SOUNDS ORGAN, ACOUSTIC, ELECTRIC, TUBA
	ONE TOUCH REGISTRATION		○

EFFECTS	SUSTAIN	UPPER, LOWER, BASS
	EFFECT	UPPER, LOWER, BASS
	GLIDE	UPPER
	TREMOLO	UPPER TAB & ORGAN, LOWER TAB & ORGAN (SLOW/FAST)
RHYTHM	RHYTHM	24 RHYTHMS (12 RHYTHMS×2 VARIATIONS) MARCH, COUNTRY, WALTZ, SWING 1, 2, LATIN 1, 2, 8 BEAT, ROCK, 16 BEAT 1, 2, DISCO
	CONTROL	START/STOP, SYNCHRO & BREAK, INTRO & ENDING, FILL IN 1, 2, COUNT INTRO, TEMPO
AUTO PLAY CHORD		AUTO PLAY CHORD (FINGERED 1, 2, MEMORY), ONE TOUCH PLAY, MUSIC STYLE ARRANGER
TECHNI-CHORD		○
DISPLAY		○ (LED)
DEMO		○
SEQUENCER		STEP RECORD (CHORD) STORAGE CAPACITY: 200 CHORDS
MIDI		START/STOP, MIDI CLOCK, NOTE ONLY, PROGRAM CHANGE MODE, MIDI OUT
CONTROL		VOLUME, TEMPO/PROGRAM, TRANSPOSE
TERMINALS		PHONES, LINE OUT AUX IN, MIDI (IN, OUT)
OTHERS		POWER SWITCH, MAIN VOLUME, EXPRESSION PEDAL, FOOT SWITCH

Technics

OUTPUT	40W
SPEAKERS	16cm×1, 6.5cm×1
POWER REQUIREMENT	135W 95W (NORTH AMERICA AND MEXICO)
POWER REQUREMENT	AC120/220/240V 50/60 Hz AC120V 60 Hz (NORTH AMERICA AND MEXICO) AC230V 50/60 Hz (EUROPE EXCEPT FOR UNITED KINGDOM)

DIMENSIONS (W×H×D)	105.2cm×100.8cm×39.1cm (41-13/32"×39-11/16"×15-13/32") 105.2cm×100.8cm×46.1cm (41-13/32"×39-11/16"×18-5/32") (USA AND MEXICO)
NET WEIGHT	36 kg (79.4 lbs.)

- Specifications are subject to change without notice for further improvement.

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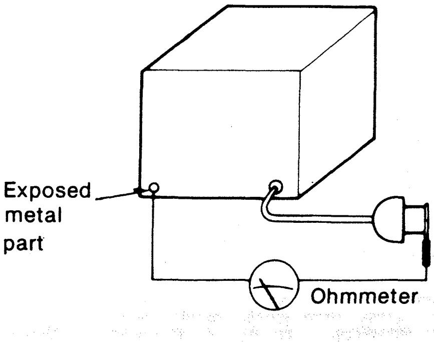
SAFETY PRECAUTION (This "safety precaution" is for the U.S.A. only)

• Safety Precaution

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only the manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

• Insulation Resistance Test

1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with an ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screw heads, connectors, control shafts, handle brackets, etc. Measurements should range from 4 MΩ to infinity for all exposed parts.

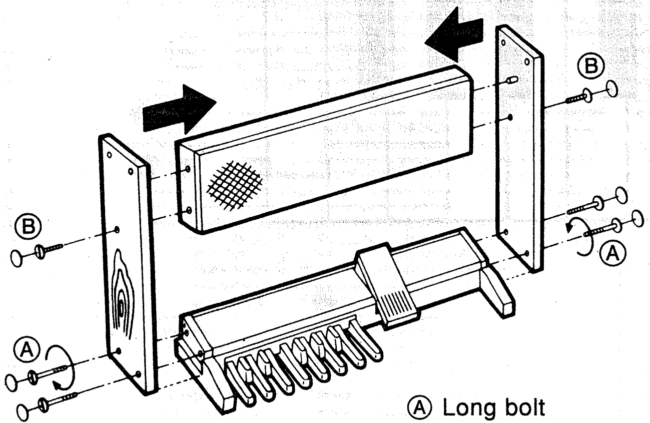


Resistance=4MΩ to ∞

HOW TO ASSEMBLE THE ORGAN

- To prevent the upper organ part from falling off the stand part, secure it firmly with the bolts.

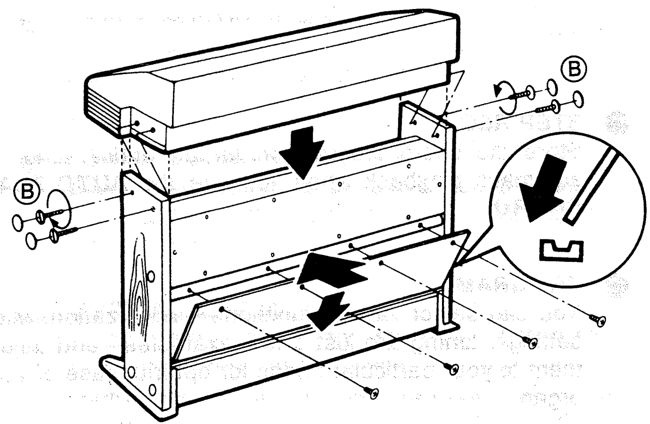
1 Assemble the stand part.



Ⓐ Long bolt
Ⓑ Short bolt

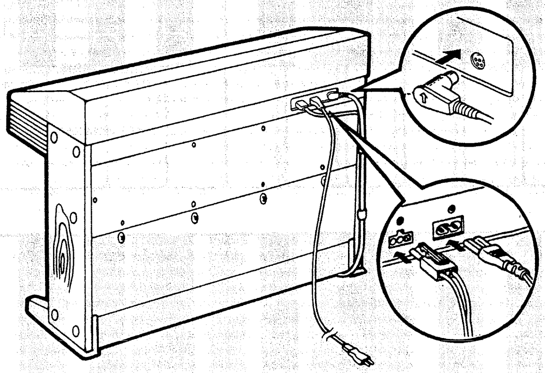
[Fig. 1]

2 Attach the upper organ part to the stand part. Then attach the rear board as shown.



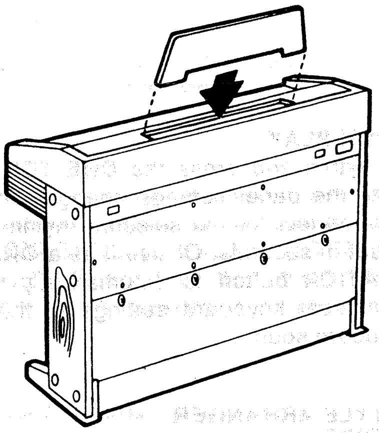
[Fig. 2]

3 Connect the power cord, speaker cord and pedal cord as shown.



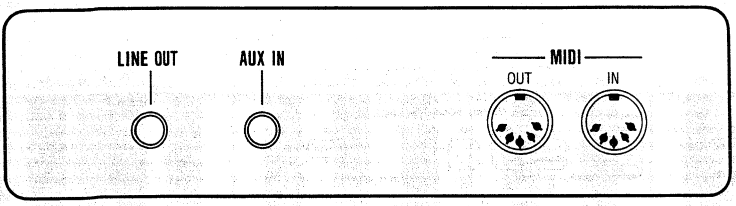
[Fig. 3]

4 Insert the music stand as shown.

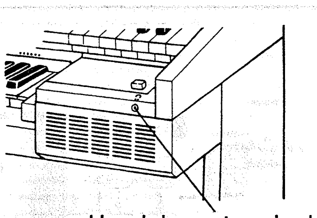


[Fig. 4]

TERMINALS


LINE OUT
AUX IN
MIDI
OUT
IN

(On the rear panel)



Headphone terminal

PHONES (Use headphones with over 16Ω impedance.)
For silent practice, headphones (option) may be used. When plugged in, the speaker system is automatically switched off, and the sound is heard only through the headphones.

AUX IN (input level 0.5 Vrms, 33 kΩ)
Other instruments such as a sound generator can be connected to this terminal, and the sound will be output from the Organ's speakers.

LINE OUT (output level 1.5 Vrms, 600 Ω)
By connecting an external high-power amplifier, the sound can be reproduced at a high volume.

MIDI
MIDI is standard specification that enables connection to equipment such as synthesizers and personal computers. Data transmission and reception are possible between the Technics organ and equipment provided with MIDI terminals.

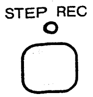
IN:	The terminal that receives data from external equipment.
OUT:	The terminal that transmits data from the organ to external equipment.
THRU:	The terminal that transfers data from the **IN** terminal directly to other equipment.

- Use a 5-pin DIN cord (less than 15m long) for these connections.

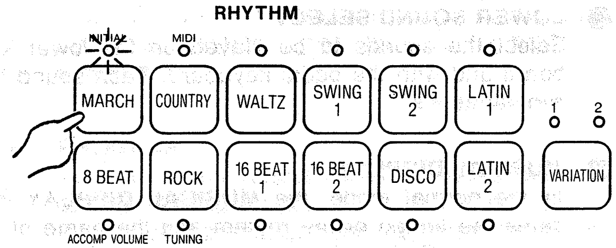
INITIAL SETTING

■ The initial setting function is used to return to the original factory settings, and to reset the customer settings and misoperations.

1. Turn on the **PROGRAM** button.

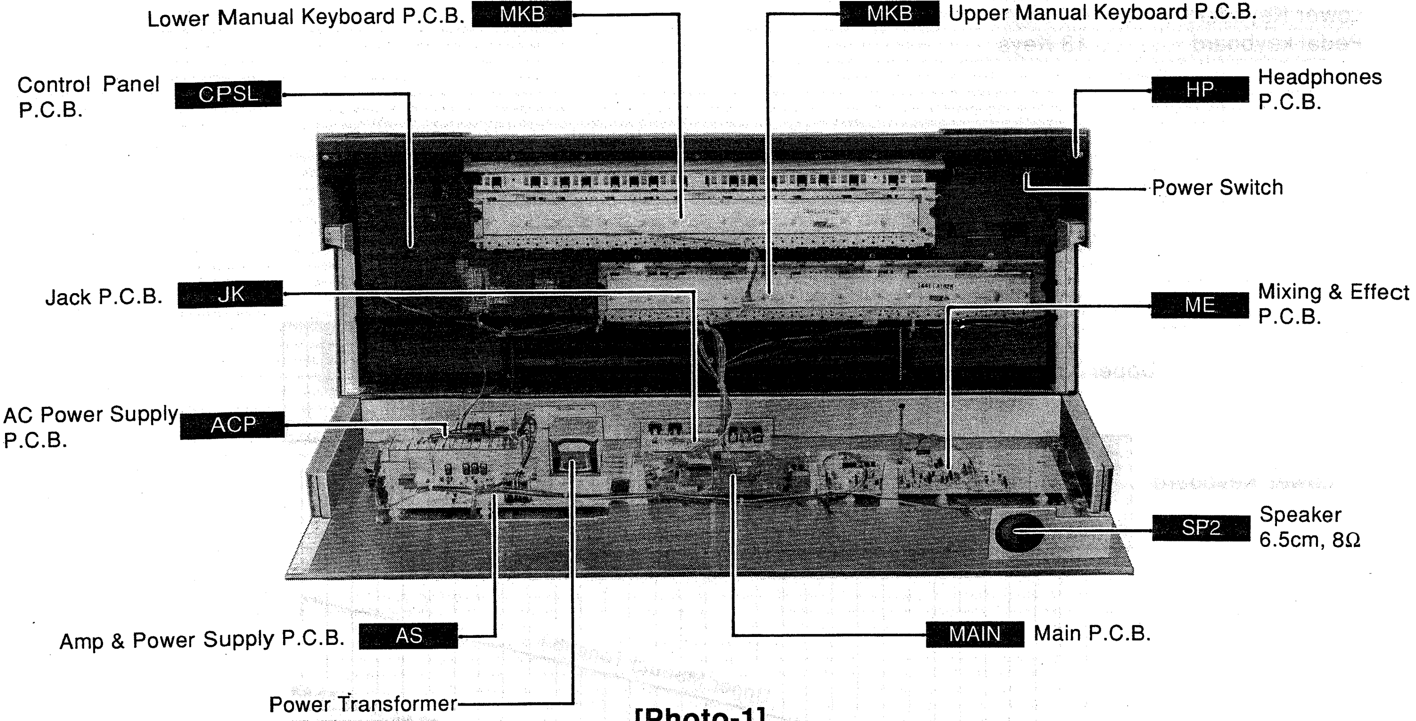

STEP REC
PROGRAM

2. In the **RHYTHM** section, press and hold the **INITIAL** button until a "beep" tone sounds and the **PROGRAM** indicator goes out (2 or 3 seconds).

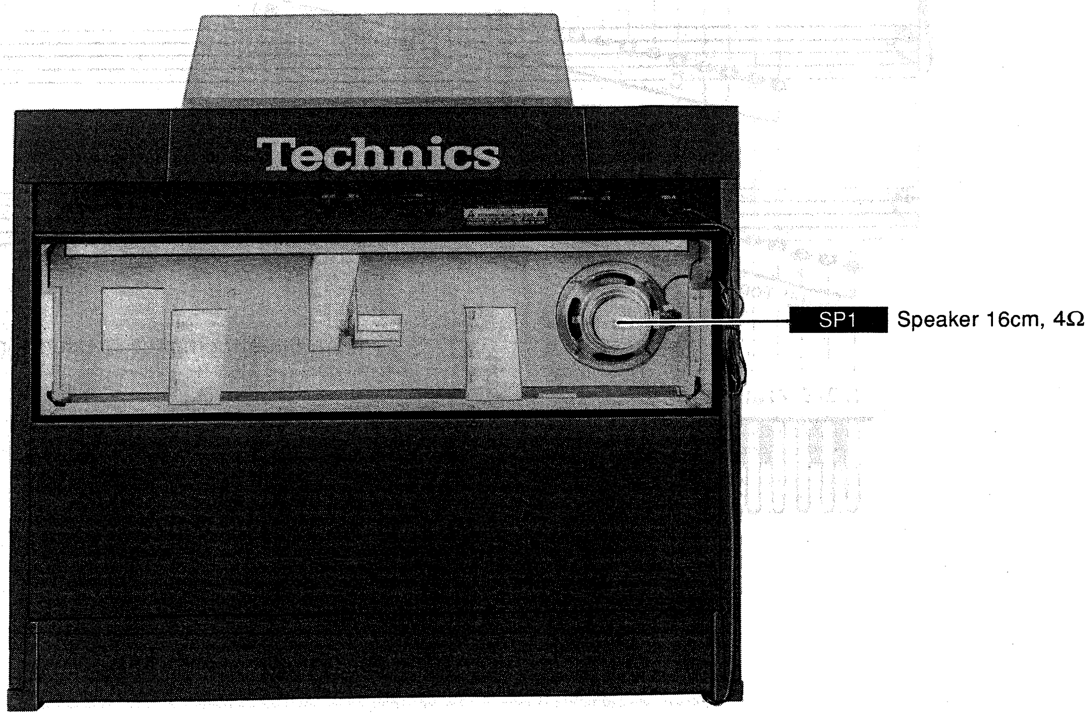

RHYTHM
INITIAL
MIDI
MARCH
COUNTRY
WALTZ
SWING 1
SWING 2
LATIN 1
1
2
8 BEAT
ROCK
16 BEAT 1
16 BEAT 2
DISCO
LATIN 2
VARIATION
ACCOMP VOLUME
TUNING

- The memories and settings are returned to their initialized status.
- The stored contents are also returned to their factory-preset status when the **POWER** is turned off once and then on again.

PARTS LOCATION


Lower Manual Keyboard P.C.B.
MKB
MKB
Upper Manual Keyboard P.C.B.
Control Panel P.C.B.
CPSL
HP
Headphones P.C.B.
Power Switch
Jack P.C.B.
JK
ME
Mixing & Effect P.C.B.
AC Power Supply P.C.B.
ACP
SP2
Speaker 6.5cm, 8Ω
Amp & Power Supply P.C.B.
AS
MAIN
Main P.C.B.
Power Transformer

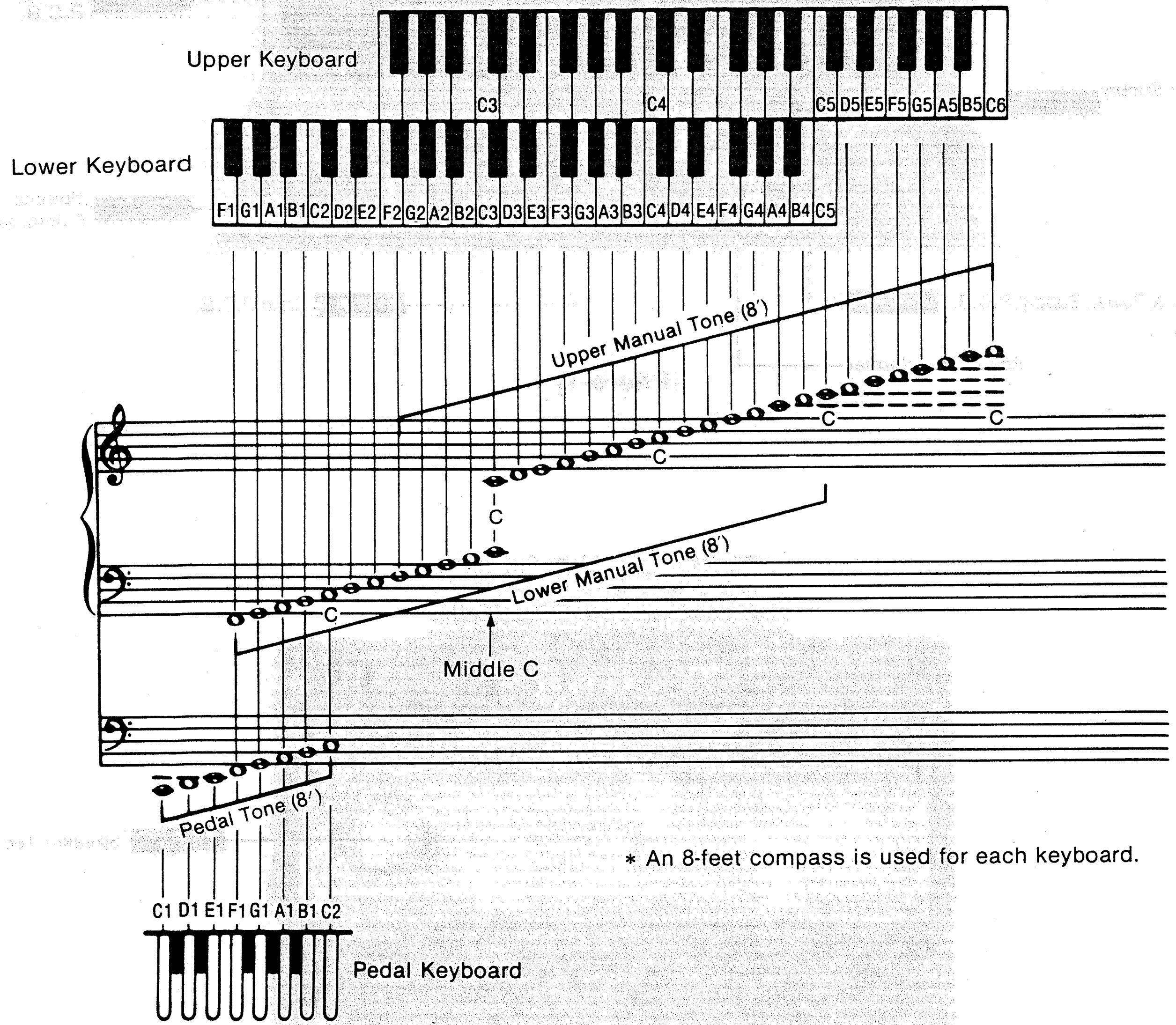
[Photo-1]


Technics
SP1
Speaker 16cm, 4Ω

[Photo-2]

KEYBOARD RANGES

Upper Keyboard	44 Keys
Lower Keyboard	44 Keys
Pedal keyboard	13 Keys

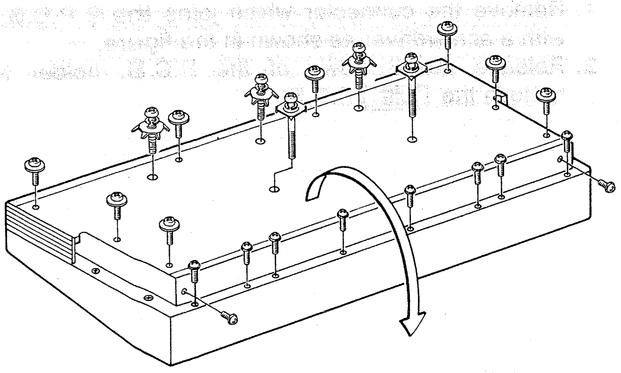

Upper Keyboard
C3
C4
C5 D5 E5 F5 G5 A5 B5 C6
Lower Keyboard
F1 G1 A1 B1 C2 D2 E2 F2 G2 A2 B2 C3 D3 E3 F3 G3 A3 B3 C4 D4 E4 F4 G4 A4 B4 C5
Upper Manual Tone (8′)
C
C
C
C
Lower Manual Tone (8′)
C
Middle C
Pedal Tone (8′)
C1 D1 E1 F1 G1 A1 B1 C2
Pedal Keyboard

∗ An 8-feet compass is used for each keyboard.

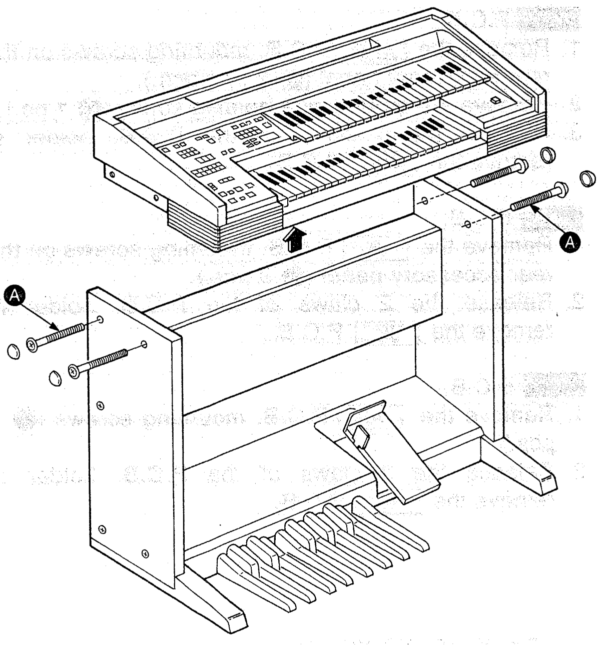
DISASSEMBLY INSTRUCTIONS

1 Removing the upper cabinet

1. Remove the upper organ part mounting bolts (Ⓐ 4 pcs.) and dismount the upper organ part from the stand.
2. Turn the upper organ part upside down as shown in Fig. 6, and remove the 23 screws from the cabinet.
3. Lift the bottom board of the cabinet, and open to the rear side of the cabinet.



[Fig. 6]



[Fig. 5]

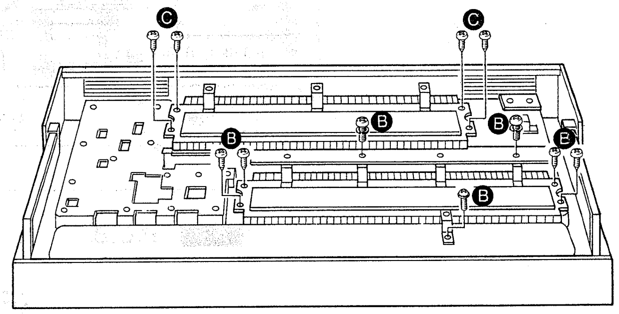
2 Removing the keyboard

Upper keyboard

1. Open the upper organ cabinet (see step 1).
2. Remove the upper keyboard securing screws (Ⓑ 7 pcs.). The upper keyboard can then be removed.

Lower keyboard

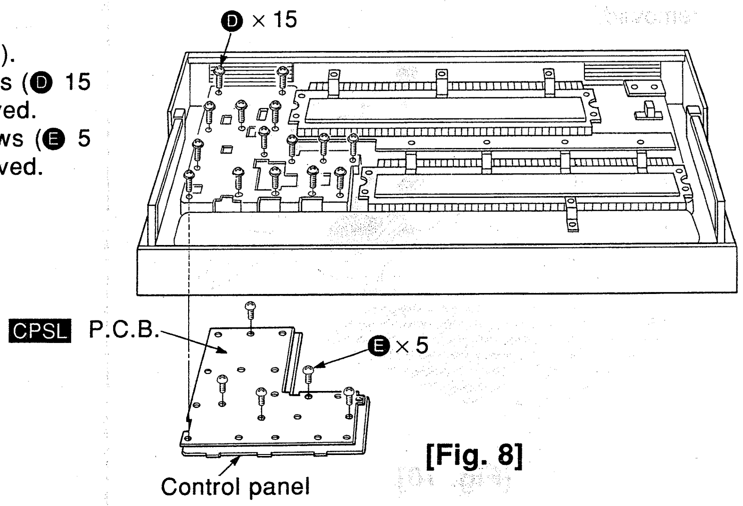
1. Open the upper organ cabinet (see step 1).
2. Remove the lower keyboard securing screws (Ⓒ 4 pcs.). The lower keyboard can then be removed.



[Fig. 7]

3 Removing the control panel

1. Open the upper organ cabinet (see step 1).
2. Remove the control panel mounting screws (Ⓓ 15 pcs.). The control panel can then be removed.
3. Remove the CPSL P.C.B. mounting screws (Ⓔ 5 pcs.). The CPSL P.C.B. can then be removed.



[Fig. 8]

4 Removing the printed circuit boards

- Open the upper organ cabinet (see step 1).

ACP P.C.B.

1. Remove the ACP P.C.B. mounting screws on the rear accessory panel (Ⓕ 2 or 3 pcs.).
2. Remove the ground wire holding screw (Ⓖ 1 pc.).
3. Release the 5 claws of the P.C.B. holder to remove the ACP P.C.B.

JK P.C.B.

1. Remove the JK P.C.B. mounting screws on the rear accessory panel (Ⓗ 3 pcs.).
2. Release the 2 claws of the P.C.B. holder to remove the JK P.C.B.

AS P.C.B.

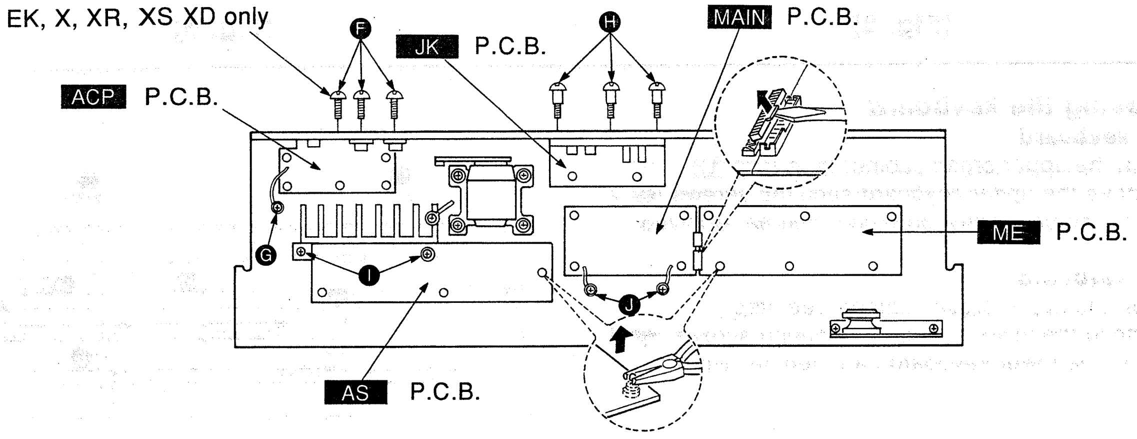
1. Remove the AS P.C.B. mounting screws (Ⓘ 2 pcs.).
2. Release the 3 claws of the P.C.B. holder to remove the AS P.C.B.

MAIN P.C.B.

1. Remove the connector which joins the 2 P.C.B.s with a screwdriver as shown in the figure.
2. Remove the ground wire holding screws (Ⓙ 2 pcs.).
3. Release the 4 claws of the P.C.B. holder to remove the MAIN P.C.B.

ME P.C.B.

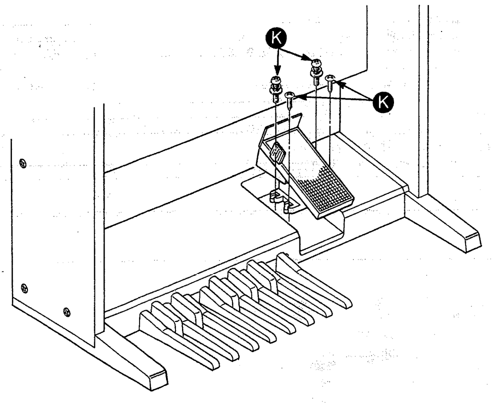
1. Remove the connector which joins the 2 P.C.B.s with a screwdriver as shown in the figure.
2. Release the 6 claws of the P.C.B. holder to remove the ME P.C.B.



[Fig. 9]

5 Removing the expression pedal

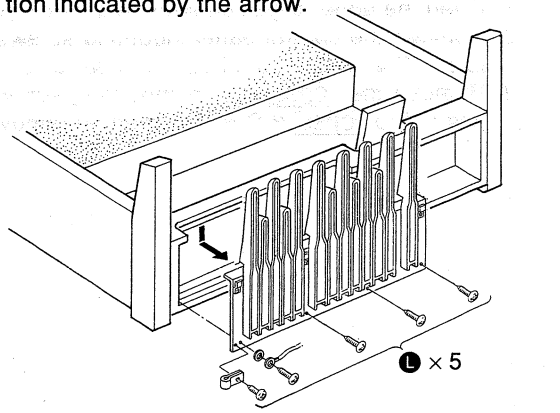
1. Remove the expression pedal mounting screws (Ⓚ 4 pcs.). The expression pedal can then be removed.



[Fig. 10]

6 Removing the pedal keyboard

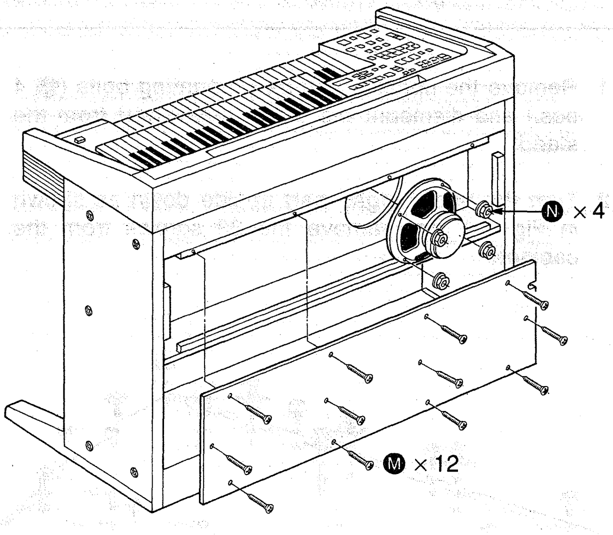
1. Remove the pedal keyboard mounting screws (Ⓛ 5 pcs.).
2. Remove the pedal keyboard by pulling in the direction indicated by the arrow.



[Fig. 11]

7 Removing the speaker

1. Remove the rear board mounting screws (Ⓜ 12 pcs.).
2. Remove the speaker mounting nuts (Ⓝ 4 pcs.), and then remove the speaker.



[Fig. 12]

MEASUREMENTS AND ADJUSTMENTS

■ **Measuring Equipment**

- Oscilloscope 20 MHz, 10:1 probe/1:1 probe

ADJUSTMENT	MEASURING CONDITIONS	EQUIPMENT	ADJUSTMENT P.C.B.	ADJ. POINT	CONNECT POINT(S)	READING
D/A Converter offset	any position	Oscilloscope	MAIN P.C.B.	VR1	Checkpoint Ⓐ	0V ±5 mV

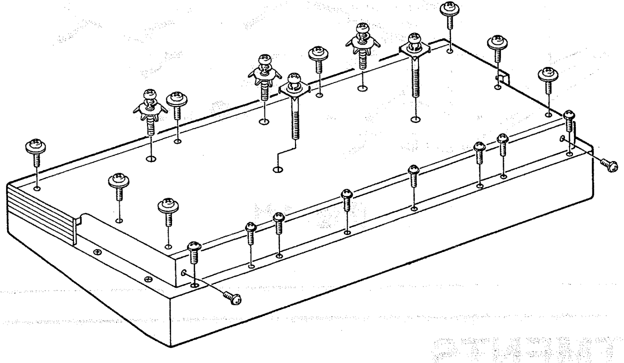
1. Set the oscilloscope voltage division to 5 mV/cm (Use the 1:1 oscilloscope probe) and connect the oscilloscope probe to MAIN P.C.B. Checkpoint Ⓐ.
2. Turn VR1 to adjust the voltage to zero.

MEMO

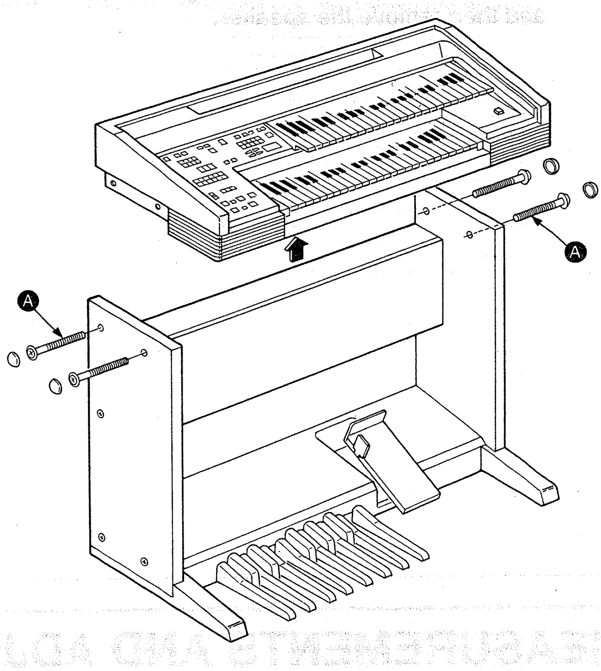
HOW TO USE THE SERVICING SPACERS (not included)

- When servicing (for example, the P.C.B.), affix the spacers as shown in the figure. (Spacer Part No. **SZZE2000**)

1. Remove the upper organ part mounting bolts (Ⓐ 4 pcs.) and dismount the upper organ part from the stand.
2. Turn the upper organ part upside down as shown in Fig. 14, and remove the 23 screws from the cabinet.



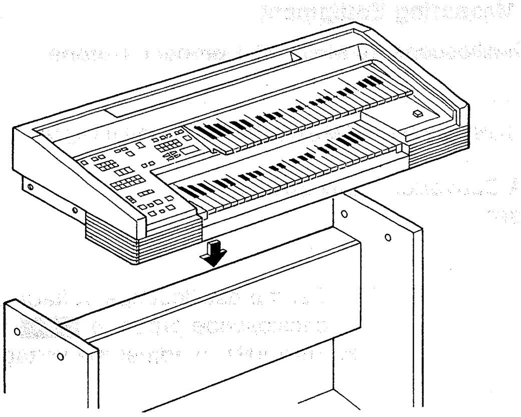
[Fig. 14]



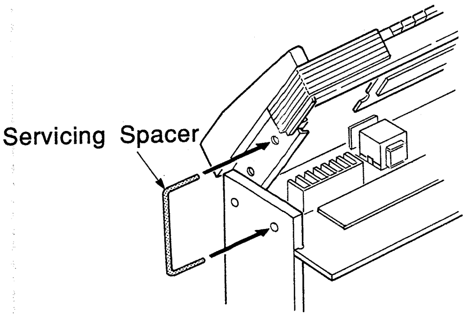
[Fig. 13]

3. Place the upper organ part on the stand, making sure to seat it firmly on the stand.
4. Open the control panel with the cabinet gently and affix the two spacers as shown in Fig. 16 and 17.

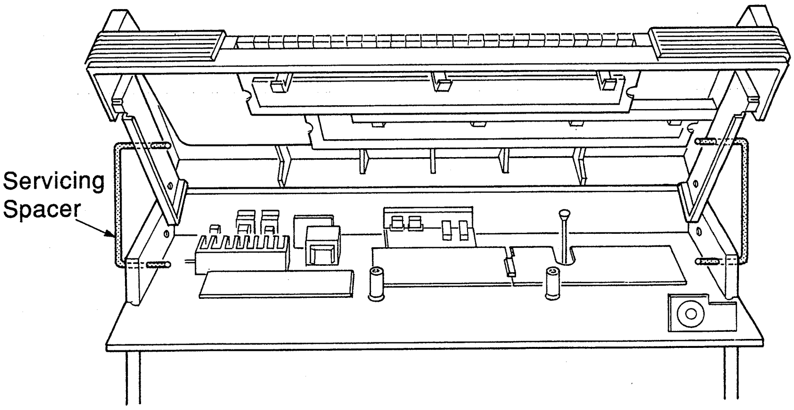
Note:
Do not apply too much pressure to the cabinet, since the upper organ part and the stand part are joined only with the two spacers.



[Fig. 15]



[Fig. 16]



[Fig. 17]

PRECAUTIONS BEFORE SERVICING

■ Precautions for measuring of the output waveforms.

1. Set the INITIAL mode before measurement. (Refer to page I-3.)
2. After INITIAL mode, set the measurement conditions as each check points.
3. The waveform was measured with a "National Digital Storage Oscilloscope VP-5730A". Therefore the waveforms of the musical tone signals shown may differ somewhat due to the difference in the timing of the triggering.
4. Since the 1/10 test probe is used, the indicated voltage value on the bottom part of each waveform photo is 1/10 of the actual value (e.g. 0.2V/cm should be 2.0V/cm).

■ Important safety notice:

Components identified by a ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only the manufacturer's specified parts.

■ Symbolic marks

The symbolic marks for resistors and capacitors used in these circuits are classified following TABLE-1 and TABLE-2.

1. RESISTORS
   - Resistors without a symbolic mark are FIXED CARBON FILM RESISTORS (ERD-type).
   - All resistors are 1/4 WATT, ±5% TOLERANCE unless otherwise designated in the schematic diagrams.

(TABLE-1)

SYMBOL	SPECIFICATION	SYMBOL	SPECIFICATION
Ⓕ	Fixed Carbon Film Resistors "FLAME-PROOF" (ERD_F_type)	Ⓕ	Fixed Metal Film Resistors "FLAME-PROOF" (ERX_type)
Ⓕ	Fixed Wire Wound Resistors "FLAME-PROOF" (ERF_type)	🄵	Fuse Type Fixed Metal Oxide Film Resistors "FLAME-PROOF" (ERQ_type)
Ⓕ	Fixed Metal Oxide Film Resistors "FLAME-PROOF" (ERG_type)	🄵	Fuse Type Fixed Carbon Film Resistors "FLAME-PROOF" (ERD2FC_type)
Ⓖ	Fixed Metal Film Resistors (Precision and High Stability) (ERO_type)		

2. CAPACITORS
   - Capacitors without a symbolic mark are POLYESTER CAPACITORS. (ECQM-type, ECQG-type, ±10% Tolerance)
   - Polarized capacitors without a symbolic mark are Aluminum Electrolytic Capacitors. (ECEA-type,±20% Tolerance)

(TABLE-2)

SYMBOL	SPECIFICATION	TYPE
Ⓝ	Non-Polarized Electrolytic Capacitors	ECEA_KN_type
Ⓨ	Non-Polarized Electrolytic (for Network System)	ECEA_Y_type
(MS)	Aluminum Electrolytic Capacitors (Low leakage current type)	ECEA_M_type
Ⓩ	Aluminum Electrolytic Capacitors (Low impedance type)	ECEA_Z_type
Ⓣ	Tantalum Solid Electrolytic Capacitors	ECS_type
(TF)	Metalized Plastic Film Capacitors (TF Series)	ECQV_type
	Polyester Film Capacitors	ECQB_type
○	Temperature Compensating Ceramic Capacitors	ECC_type
	High-Dielectric Constant Ceramic Capacitors	ECK_type ECR_type
	Ceramic Capacitors (Cylinder type)	ECBA_type
	Metalized Polyester Film Capacitors for Across the Line	ECQ_EW_type
	Aluminum Electrolytic Capacitors for Smoothing Circuit	ECES_type

SYMPTOMS WHICH APPEAR TO BE SIGNS OF TROUBLE

The following changes in performance may occur in the Technics Organ but do not indicate trouble.

	Symptom	Remedy
Sounds and effects	The buttons, keys, etc. malfunction.	• Turn off the **POWER** button once, then turn it on again.
	No sound is produced when the keys are pressed.	• The **MAIN VOLUME** is at the minimum setting. Adjust the volume with the **MAIN VOLUME** control. • The **DEMO** button is on. ("– – –" is shown on the display.) Press the **DEMO** button to turn it off. The display returns to the normal performance display. • The volumes for the selected parts are set to the minimum levels. Use the **VOLUME** buttons to set the volumes of the relevant parts to appropriate levels. • The **LOCAL CONTROL** for a part performed on the keyboard is set to OFF. Set the **LOCAL CONTROL** to on.
	The sound of the lower keyboard or pedal keyboard does not stop.	• This occurs if the lower keyboard is played when the **FINGERED 1** or **2** and the **MEMORY** buttons are on. Turn off the **MEMORY** button.
	The foot switch does not operate properly.	• Any function is storable in the foot switch. The default setting is for the glide control. Store your favorite function.
Rhythm	The rhythm does not start.	• The **DRUMS** volume is set to the minimum level. Use the **VOLUME** buttons to set the **DRUMS** volume to an appropriate level. • The **MIDI CLOCK** is set the external clock (ON). Set the **MIDI CLOCK** to the internal clock (OFF).
AUTO PLAY CHORD	No sound is produced for the automatic accompaniment, or only the sounds of some parts are produced.	• An **ACCOMP** part does not sound if its corresponding volume is set to the minimum level. Use the **VOLUME** buttons to set the **ACCOMP** volume to appropriate levels.

MIDI IMPLEMENTATION CHART

Organ

[SX-EN1/EN2/EN3/EN4] **(Transmitted)**

Function		UPPER POLY, SPECIAL (EN2/EN3/EN4), SOLO (EN1/EN4)	LOWER POLY, SPECIAL (EN2/EN3/EN4), SOLO (EN4)	ACCOMP 1, 2, 3	BASS	DRUMS	CONTROL	Remarks
Basic Channel	Default	1 1~16	2 1~16	5 (1), 9 (2), 10 (3) 1~16	3 1~16	15 1~16	16 1~16	(EN1) memorized (EN2/EN3/EN4)
	Changed	× 1~16	× 1~16	× 1~16	× 1~16	× 1~16	× 1~16	(EN1) (EN2/EN3/EN4)
Mode	Default	3	3	3	3	3	3	OMNI OFF, POLY MODE
	Messages	×	×	×	×	×	×	
	Altered	—	—	—	—	—	—	
Note Number		0~127	0~127	0~127	0~127	0~127	—	Changes depending on the position of the transpose control and octave shift.
	True voice	—	—	—	—	—	—	
Velocity	Note ON	× ○	× ○	○* ○***	○* ○***	○* ○	—	(EN1) (EN2/EN3/EN4)
	Note OFF	× (9nH:v=0)	× (9nH:v=0)	× (9nH:v=0)	× (9nH:v=0)	× (9nH:v=0)	—	
After Touch	Key's	×	×	×	×	×	×	
	Ch's	×	×	×	×	×	×	
Pitch Bender		× ○***	× ○***	○* ○***	○* ○***	× ×	× ×	(EN1/EN2) (EN3/EN4)
Control Change	1	× ○***	× ○***	○* ○***	○* ○***	× ×	× ×	modulation (EN1/EN2) (EN3/EN4)
	7	○	○	○	○	○	○	volume (main volume)
	11	×	×	×	×	×	○	expression pedal
	64	○	○	○	○	×	×	sustain
	80	×	○**	×	×	×	×	auto play chord
	82	×	×	×	×	○	×	intro, fill in, ending
	92	○**	○**	×	×	×	×	tremolo
	94	○	○	○	○	×	×	effect
Prog Change		○	○	○	○	○	×	
	True #	—	—	—	—	—	—	
System exclusive		×						
System common	Song Pos	×						
	Song Sel	× (EN1/EN2) ○× (EN3/EN4)						0~19
	Tune	×						
System Real Time	Clock	○						
	Commands	○×						start/stop, continue
Aux Messages	Local ON/OFF	×	×	×	×	×	—	
	All notes OFF	○	○	○	○	○	—	
	Active Sense	○						
	Reset	×						
Notes		○*..........................AUTO PLAY CHORD pattern only ○**..........................POLY part only ○***..........................AUTO PLAY CHORD or SEQUENCER PLAY only ○×..........................Whether or not the data for each of these items is transmitted can be set.						

Mode 1: OMNI ON, POLY **Mode 2:** OMNI ON, MONO ○: Yes

Mode 3: OMNI OFF, POLY **Mode 4:** OMNI OFF, MONO ×: No

Organ

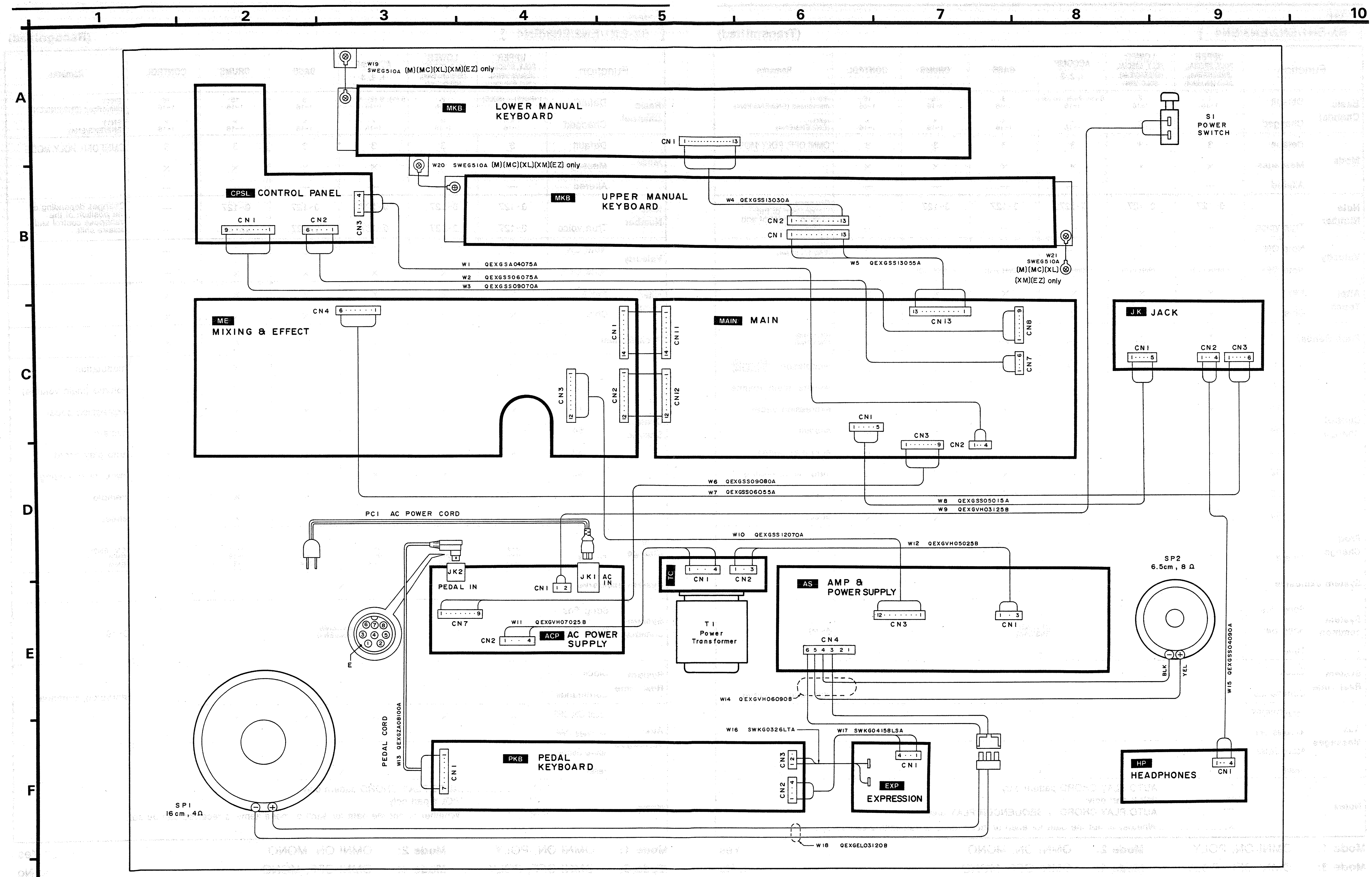
[SX-EN1/EN2/EN3/EN4] **(Recognized)**

Function		UPPER POLY, SPECIAL (EN2/EN3/EN4), SOLO (EN1/EN4)	LOWER POLY, SPECIAL (EN2/EN3/EN4), SOLO (EN4)	ACCOMP 1, 2, 3	BASS	DRUMS	CONTROL	Remarks
Basic Channel	Default	1 (POLY), 4 (SOLO) 1~16	2 1~16	5 (1), 9 (2), 10 (3) 1~16	3 1~16	15 1~16	16 1~16	(EN1) memorized (EN2/EN3/EN4)
	Changed	× 1~16	× 1~16	× 1~16	× 1~16	× 1~16	× 1~16	(EN1) (EN2/EN3/EN4)
Mode	Default	3	3	3	3	3	3	OMNI OFF, POLY MODE
	Messages	×	×	×	×	×	×	
	Altered	—	—	—	—	—	—	
Note Number		0~127	0~127	0~127	0~127	0~127	—	Changes depending on the position of the transpose control and octave shift.
	True voice	0~127	0~127	0~127	0~127	48~81	—	
Velocity	Note ON	○	○	○	○	○	—	
	Note OFF	×	×	×	×	×	—	
After Touch	Key's	×	×	×	×	×	×	
	Ch's	×	×	×	×	×	×	
Pitch Bender		○	○	○	○	×	×	
Control Change	1	○	○	○	○	×	×	modulation
	7	○	○	○	○	○	○	volume (main volume)
	11	×	×	×	×	×	○	expression pedal
	64	○	○	○	○	×	×	sustain
	80	×	○**	×	×	×	×	auto play chord
	82	×	×	×	×	○	×	intro, fill in, ending
	92	○**	○**	×	×	×	×	tremolo
	94	○	○	○	○	×	×	effect
Prog Change		○	○	○	○	○	×	
	True #	0~9 0~9 0~13	0~7 0~7 0~9	0~7 0~7 0~9	0~3 0~3 0~4	0~11 0~19 0~21	—	(EN1/EN2) (EN3) (EN4)
System exclusive		×						
System common	Song Pos	×						
	Song Sel	× (EN1/EN2) ○× (EN3/EN4)						0~19
	Tune	×						
System Real Time	Clock	○						
	Commands	○×						start/stop, continue
Aux Messages	Local ON/OFF	×	×	×	×	×	—	
	All notes OFF	○	○	○	○	○	—	
	Active Sense	○						
	Reset	×						
Notes		○*..........................AUTO PLAY CHORD pattern only ○**..........................POLY part only ○×..........................Whether or not the data for each of these items is received can be set.						

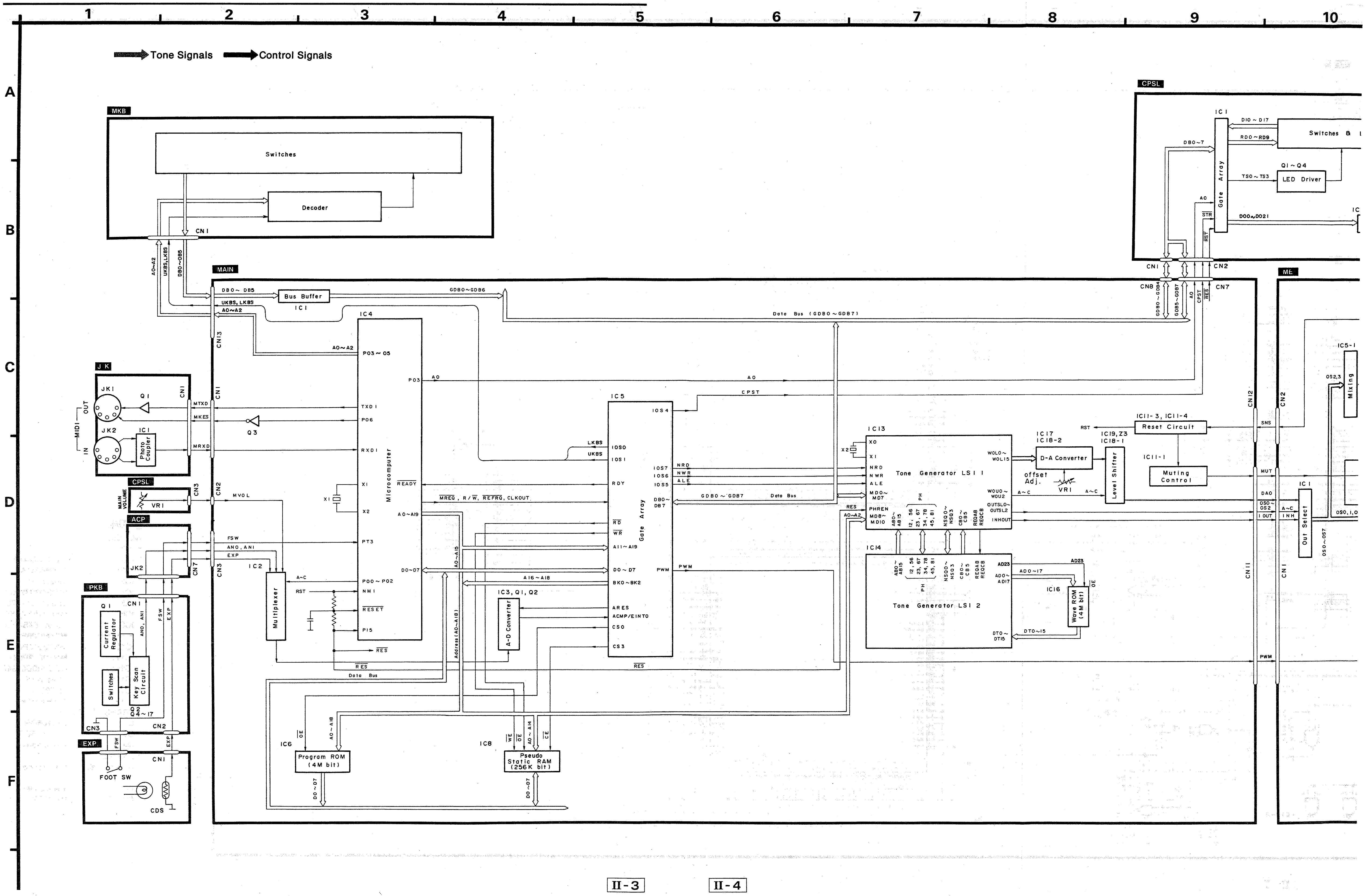
Mode 1: OMNI ON, POLY **Mode 2:** OMNI ON, MONO ○: Yes

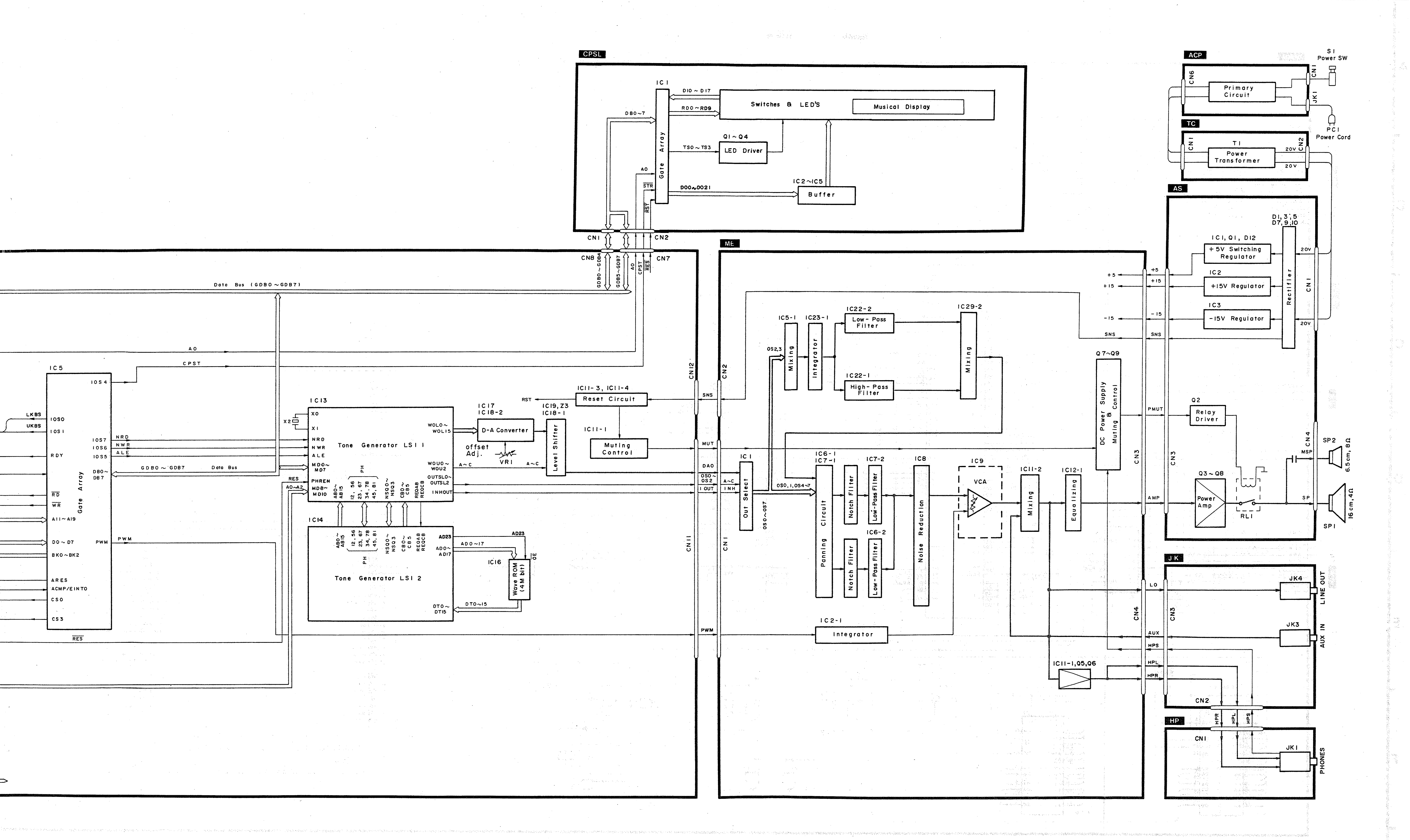
Mode 3: OMNI OFF, POLY **Mode 4:** OMNI OFF, MONO ×: No

WIRING CONNECTION DIAGRAM


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
W19
SWEG510A (M)(MC)(XL)(XM)(EZ) only
MKB
LOWER MANUAL KEYBOARD
CN1
1 13
W20 SWEG510A (M)(MC)(XL)(XM)(EZ) only
S1
POWER SWITCH
CPSL
CONTROL PANEL
CN1
9 1
CN2
6 1
CN3
1 4
MKB
UPPER MANUAL KEYBOARD
W4 QEXGSS13030A
CN2
1 13
CN1
1 13
W5 QEXGSS13055A
W21
SWEG510A
(M)(MC)(XL)
(XM)(EZ) only
W1 QEXGSA04075A
W2 QEXGSS06075A
W3 QEXGSS09070A
ME
MIXING & EFFECT
CN4
6 1
CN1
1 14
CN3
1 12
CN2
1 12
CN11
1 14
CN12
1 12
MAIN
MAIN
13 1
CN13
CN8
1 9
CN7
1 6
CN1
1 5
CN3
1 9
CN2
1 4
JK
JACK
CN1
1 5
CN2
1 4
CN3
1 6
W6 QEXGSS09080A
W7 QEXGSS06055A
W8 QEXGSS05015A
W9 QEXGVH03125B
PC1 AC POWER CORD
W10 QEXGSS12070A
W12 QEXGVH05025B
JK2
PEDAL IN
CN1
1 2
JK1
AC IN
CN7
1 9
W11 QEXGVH07025B
CN2
1 4
ACP
AC POWER SUPPLY
TC
CN1
1 4
CN2
1 3
T1
Power Transformer
AS
AMP & POWER SUPPLY
CN3
12 1
CN1
1 3
CN4
6 5 4 3 2 1
SP2
6.5cm , 8 Ω
BLK
YEL
W15 QEXGSS04090A
⑥⑦⑧
③④⑤
①②
E
W14 QEXGVH06090B
PEDAL CORD
W13 QEXGZA08100A
W16 SWKG0326LTA
W17 SWKG04158LSA
PKB
PEDAL KEYBOARD
CN1
1 7
CN3
1 2
CN2
1 4
CN1
4 1
EXP
EXPRESSION
HP
HEADPHONES
CN1
1 4
SP1
16 cm , 4Ω
W18 QEXGEL03120B

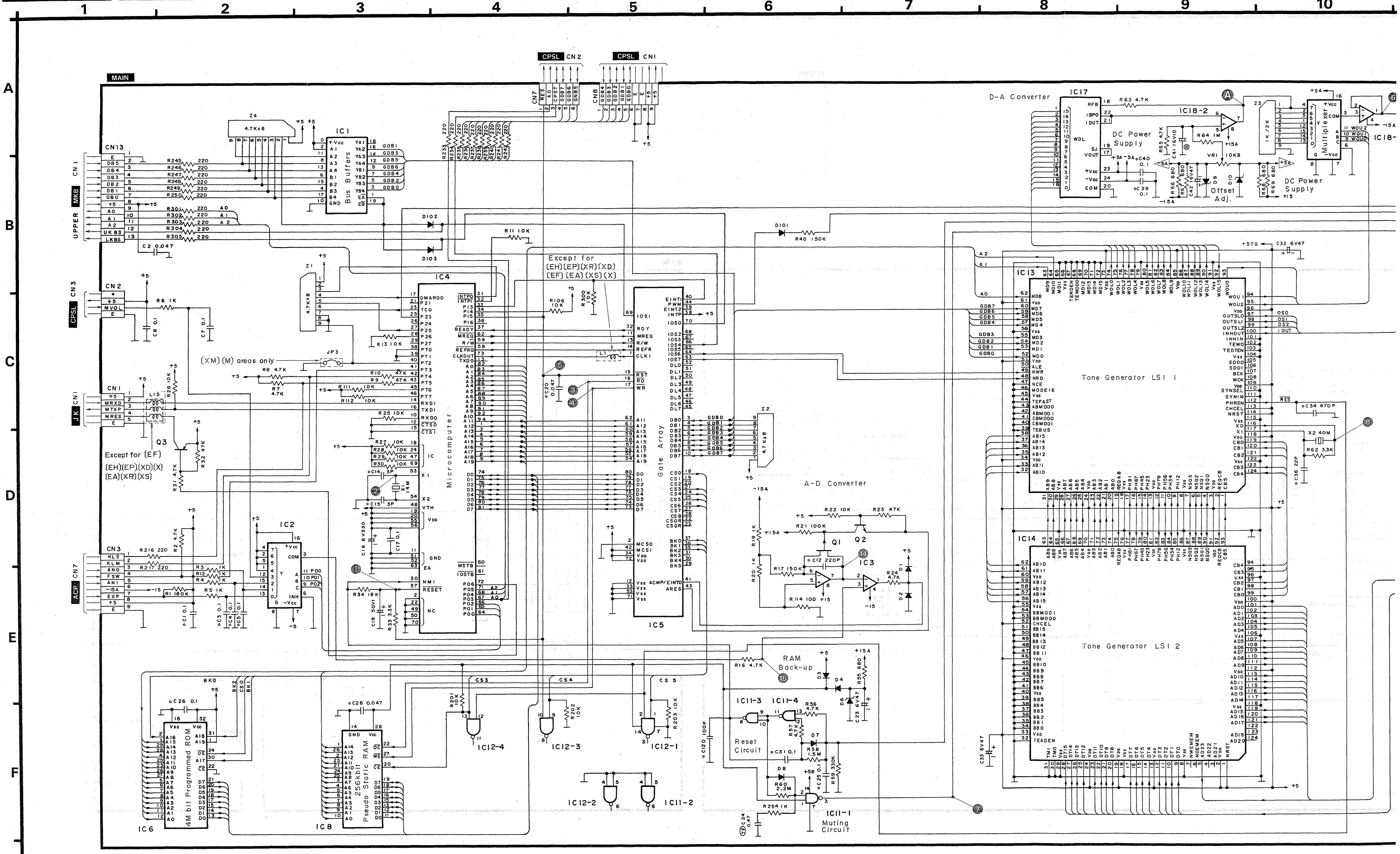
BLOCK DIAGRAM

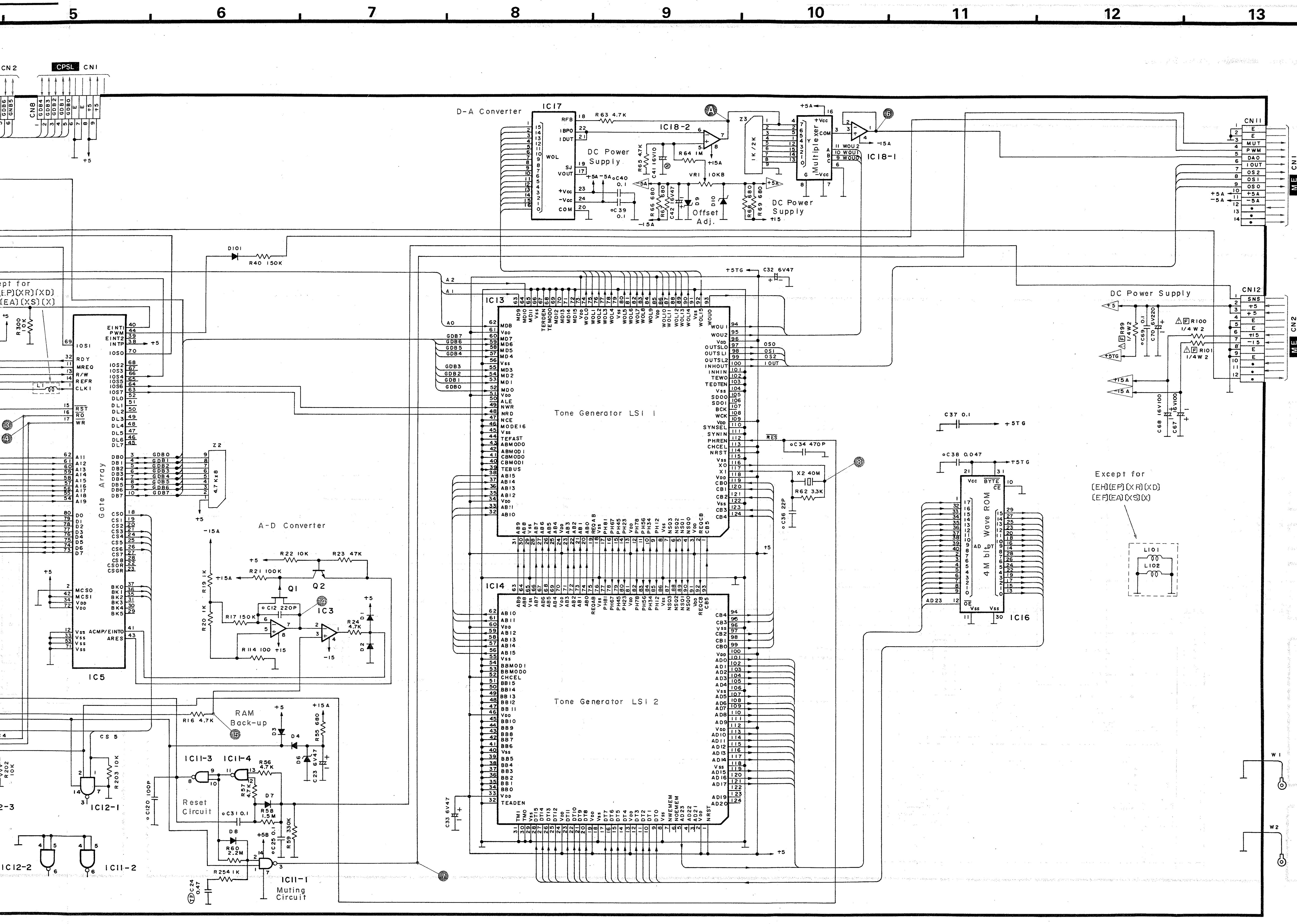

1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
Tone Signals
Control Signals
MKB
Switches
Decoder
CN1
A0~A2
UKBS,LKBS
DB0~DB5
MAIN
DB0~DB5
Bus Buffer
IC1
GDB0~GDB6
UKBS, LKBS
A0~A2
CN13
IC4
A0~A2
P03~05
P03
A0
Data Bus (GDB0~GDB7)
JK
JK1
Q1
CN1
OUT
MIDI
IN
JK2
IC1
Photo Coupler
MTXD
MKES
MRXD
Q3
TXD1
P06
RXD1
X1
X2
READY
Microcomputer
A0~A19
D0~D7
PT3
P00~P02
NMI
RESET
P15
CPSL
MAIN VOLUME
VR1
CN3
CN2
MVOL
ACP
FSW
AN0, AN1
EXP
JK2
CN7
CN3
IC2
Multiplexer
A~C
RST
RES
Data Bus
MREQ, R/W, REFRQ, CLKOUT
Address (A0~A18)
A0~A15
A16~A18
IC3, Q1, Q2
A-D Converter
IC5
IOS4
IOS0
IOS1
LKBS
UKBS
IOS7
IOS6
IOS5
RDY
RD
WR
A11~A19
D0~D7
BK0~BK2
ARES
ACMP/EINT0
CS0
CS3
Gate Array
DB0~DB7
PWM
CPST
NRD
NWR
ALE
GDB0~GDB7
Data Bus
RES
PKB
Q1
CN1
Current Regulator
AN0, AN1
FSW
EXP
Switches
Key Scan Circuit
Q0 Q4 ~ I7
CN3
CN2
EXP
FOOT SW
CDS
IC6
OE
A0~A18
Program ROM (4M bit)
D0~D7
IC8
WE
OE
A0~A14
CE
Pseudo Static RAM (256K bit)
D0~D7
IC13
X0
X1
X2
NRD
NWR
ALE
MD0~MD7
PHREN
MD8~MD10
A0~A2
RES
Tone Generator LSI 1
WOL0~WOL15
WOU0~WOU2
OUTSL0~OUTSL2
INHOUT
AB0~AB15
12,56 23,67 34,78 45,81
PH
NSQ0~NSQ3
CB0~CB5
REQAB
REQCB
IC14
Tone Generator LSI 2
AD23
AD0~AD17
DT0~DT15
IC16
Wave ROM (4M bit)
OE
AD23
AD0~I7
DT0~I5
IC17
IC18-2
D-A Converter
offset Adj.
VR1
A~C
IC19, Z3
IC18-1
Level Shifter
RST
IC11-3, IC11-4
Reset Circuit
IC11-1
Muting Control
CPSL
IC1
DI0~DI7
RD0~RD9
Switches &
DB0~7
Q1~Q4
TS0~TS3
LED Driver
Gate Array
A0
STR
RST
DO0~DO21
IC
CN1
CN2
CN8
CN7
GDB0~GDB4
GDB5~GDB7
A0
CPST
RES
ME
CN12
CN2
SNS
MUT
DA0
OS0~OS2
1 OUT
A~C
INH
IC1
Out Select
OS0~OS7
OS0,1,0
CN11
CN1
PWM
IC5-1
OS2,3
Mixing


5
6
7
8
9
10
11
12
13
14
CPSL
IC1
Gate Array
D10 ~ D17
RD0 ~ RD9
DB0 ~ 7
Switches & LED'S
Musical Display
Q1 ~ Q4
TS0 ~ TS3
LED Driver
A0
STR
RST
D00 ~ D021
IC2 ~ IC5
Buffer
CN1
CN2
CN8
CN7
GDB0 ~ GDB4
GDB5 ~ GDB7
CPST
RES
Data Bus (GDB0 ~ GDB7)
A0
CPST
IC5
IOS4
LKBS
UKBS
IOS0
IOS1
RDY
IOS7
IOS6
IOS5
DB0 ~ DB7
GDB0 ~ GDB7
Data Bus
Gate Array
RD
WR
A11 ~ A19
D0 ~ D7
PWM
BK0 ~ BK2
ARES
ACMP/EINT0
CS0
CS3
RES
IC13
X2
X0
X1
NRD
NWR
ALE
MD0 ~ MD7
PHREN
MD8 ~ MD10
RES
A0 ~ A2
Tone Generator LSI 1
WOL0 ~ WOL15
WOU0 ~ WOU2
OUTSL0 ~ OUTSL2
INHOUT
PH
AB0 ~ AB15
12, 56
23, 67
34, 78
45, 81
NSQ0 ~ NSQ3
CB0 ~ CB5
REQAB
REQCB
IC14
Tone Generator LSI 2
AD23
AD0 ~ AD17
DT0 ~ DT15
IC16
Wave ROM (4M bit)
OE
IC17
IC18-2
D-A Converter
offset Adj.
VR1
A ~ C
IC19, Z3
IC18-1
Level Shifter
RST
IC11-3, IC11-4
Reset Circuit
IC11-1
Muting Control
CN12
CN11
SNS
MUT
DAO
OS0 ~ OS2
I OUT
PWM
ME
CN2
CN1
A ~ C
INH
IC1
Out Select
OS0 ~ OS7
OS2,3
OS0,1,OS4 ~ 7
IC5-1
Mixing
IC23-1
Integrator
IC22-2
Low-Pass Filter
IC22-1
High-Pass Filter
IC29-2
Mixing
IC6-1
IC7-1
Panning Circuit
Notch Filter
IC7-2
Low-Pass Filter
IC6-2
Notch Filter
Low-Pass Filter
IC8
Noise Reduction
IC9
VCA
IC11-2
Mixing
IC12-1
Equalizing
IC2-1
Integrator
Q7 ~ Q9
DC Power Supply & Muting Control
IC11-1, Q5, Q6
CN3
CN4
+5
+15
-15
SNS
PMUT
AMP
LO
AUX
HPS
HPL
HPR
ACP
CN6
Primary Circuit
CN1
JK1
S1
Power SW
PC1
Power Cord
TC
CN1
T1
Power Transformer
CN2
20V
AS
D1, 3, 5
D7, 9, 10
IC1, Q1, D12
+5V Switching Regulator
IC2
+15V Regulator
IC3
-15V Regulator
Rectifier
CN1
20V
Q2
Relay Driver
Q3 ~ Q8
Power Amp
RL1
CN4
MSP
SP
SP2
6.5 cm, 8Ω
SP1
16 cm, 4Ω
JK
JK4
LINE OUT
JK3
AUX IN
CN2
HPR
HPL
HPS
HP
CN1
JK1
PHONES

MAIN

MAIN CIRCUIT DIAGRAM


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
MAIN
CPSL CN2
CPSL CN1
CN7
CN8
CN13
MKB CN1
UPPER
CPSL CN3
CN2
JK CN1
CN1
Except for (EF)
(EH)(EP)(XD)(X)
(EA)(XR)(XS)
ACP CN7
CN3
Z4
4.7K×8
IC1
Bus Buffers
IC4
Microcomputer
Except for
(EH)(EP)(XR)(XD)
(EF)(EA)(XS)(X)
(XM)(M) areas only
JP3
IC5
Gate Array
Z1
4.7K×8
Z2
4.7K×8
IC2
IC6
4M bit Programmed ROM
IC8
256kbit Pseudo Static RAM
IC12-4
IC12-3
IC12-1
IC12-2
IC11-2
IC11-3
IC11-4
Reset Circuit
IC11-1
Muting Circuit
RAM Back-up
A-D Converter
IC3
Q1
Q2
Q3
D-A Converter
IC17
IC18-2
DC Power Supply
Offset Adj.
Z3
1K/2K
Multiplexer
IC18-
IC13
Tone Generator LSI 1
IC14
Tone Generator LSI 2
X1 4M
X2 40M
D101
D102
D103
R40 150K
R11 10K
VR1 10KB


5
6
7
8
9
10
11
12
13
14
CN2
CPSL CN1
CN8
D-A Converter
IC17
IC18-2
IC18-1
DC Power Supply
Offset Adj.
Multiplexer
1K/2K
Z3
VR1 10KB
CN11
ME CN1
CN12
ME CN2
D101
R40 150K
IC13
Tone Generator LSI 1
IC14
Tone Generator LSI 2
IC5
Gate Array
Z2
4.7K×8
A-D Converter
IC3
Q1
Q2
RAM Back-up
Reset Circuit
IC11-1
Muting Circuit
IC11-3
IC11-4
IC12-1
IC12-2
IC11-2
IC16
4M bit Wave ROM
X2 40M
Except for
(EH)(EP)(XR)(XD)
(EF)(EA)(XS)(X)
L101
L102
W1
W2

MAIN

NOTES:

- **IC'S**

IC1:	M74HC244FP
IC2:	T74H4051AF
IC3:	M5238FP
IC4:	SVIGD70320GJ
IC5:	D65012GF-A79
IC6:	QSIGCEN2AX0
IC8:	HM65256BLF10
IC11, 12:	M74HC00FP
IC13:	MN73012PGC
IC14:	MN73013PGD
IC16:	QSIGM3C04347
IC17:	PCM55HP
IC18:	M5238FP
IC19:	T74H4051AF

- **TRANSISTORS**

Q1:	2SJ105GR
Q2:	2SC1815GR
Q3:	2SA1015-GR

- **DIODES**

D1~4, 7, 8, 101~103:	MA165TA5
D6:	MA4051MTA
D9, 10:	MA4056H

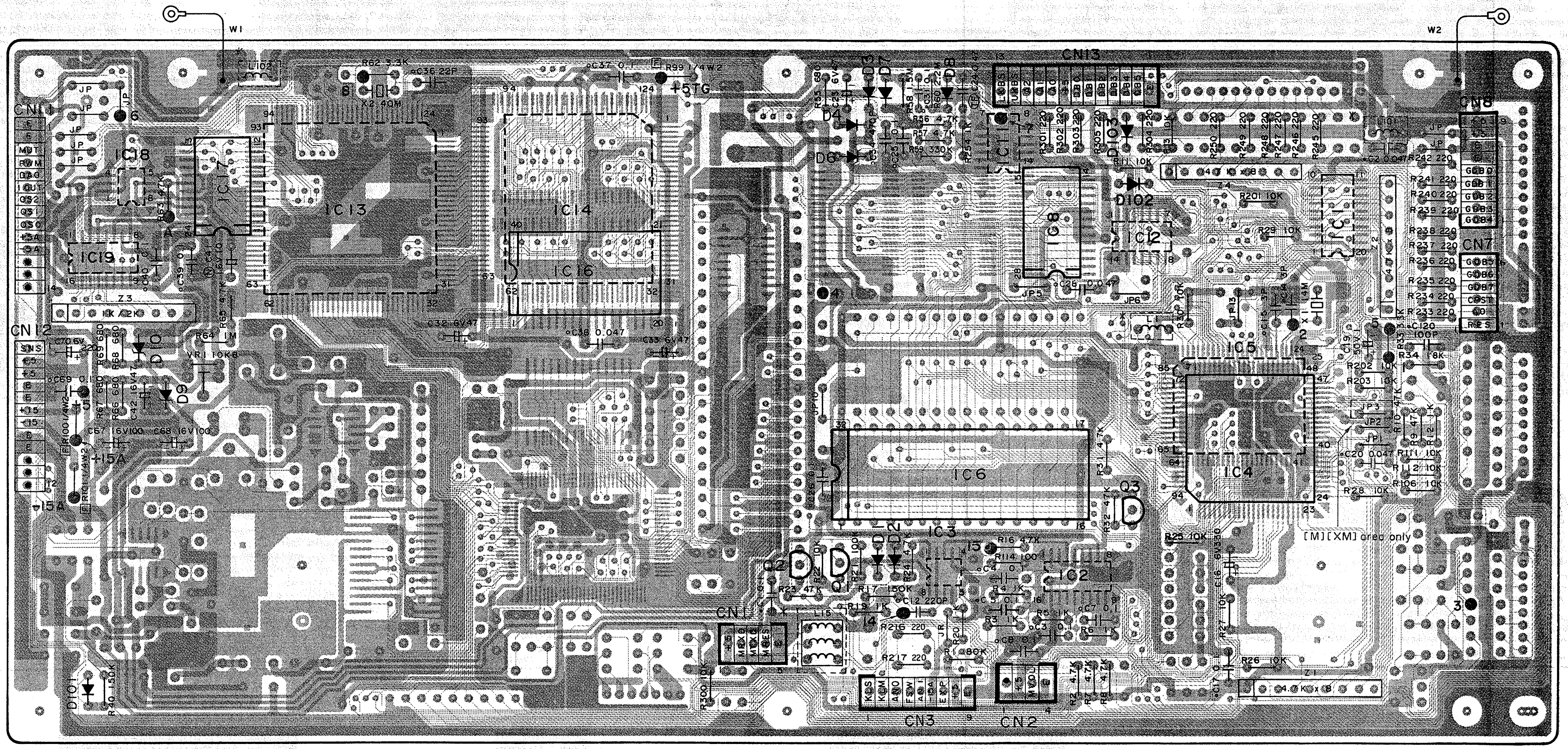
MAIN CIRCUIT BOARD

- [M] [XM] areas **SXPG2073331**
- [EF] [EH] [EA] [EP] [X] [XR] [XS] [XD] areas **SXPG2073351**
- Other areas **SXPG2073311**

＊Main P.C.B. comparison chart by area.

Area	P.C.B. No.	JP3	L1, L15, L101, L102
M, XM	SXPG2073331	○	○
EF, EH, EA, EP, X, XR, XS, XD	SXPG2073351	×	×
Other areas	SXPG2073311	×	○

Circuit view on top of P.C.B.


W1
W2
CN11
CN12
CN13
CN7
CN8
CN1
CN3
CN2
IC13
IC14
IC16
IC17
IC18
IC19
IC6
IC8
IC5
IC4
IC3
IC2
IC11
IC12
Q3
D9
D10
D101
D102
D103
Z3
Z1
JP
JP2
JP3
JP5
JP6
[M] [XM] area only

MAIN

NOTES:

- IC'S

IC1:	M74HC244FP
IC2:	T74H4051AF
IC3:	M5238FP
IC4:	SVIGD70320GJ
IC5:	D65012GF-A79
IC6:	QSIGCEN2AX0
IC8:	HM65256BLF10
IC11, 12:	M74HC00FP
IC13:	MN73012PGC
IC14:	MN73013PGD
IC16:	QSIGM3C04347
IC17:	PCM55HP
IC18:	M5238FP
IC19:	T74H4051AF

- TRANSISTORS

Q1:	2SJ105GR
Q2:	2SC1815GR
Q3:	2SA1015-GR

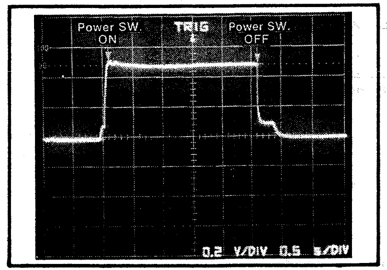
- DIODES

D1～4, 7, 8, 101～103:	MA165TA5
D6:	MA4051MTA
D9, 10:	MA4056H

■ Waveform measurement

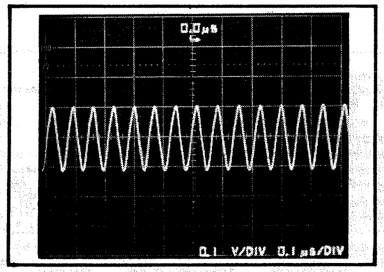
1. Turn on the Power button
2. Set the E. organ to the required followings.
   - UPPER SOUND SELECT .... TAB & ORGAN
     - TAB .... 8'——————— ON
     - 16' 4' 2'——————— OFF
     - EFFECT .... OFF

❶, ❺ $\overline{\text{RESET}}$

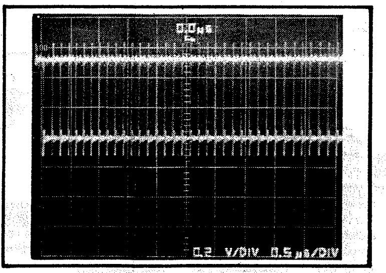


- Power SW............................ON → OFF

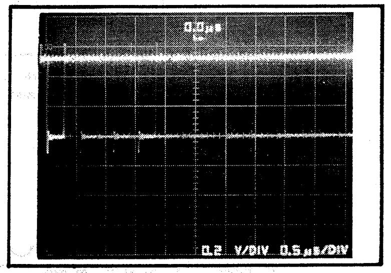
❷ X1, 14MHz



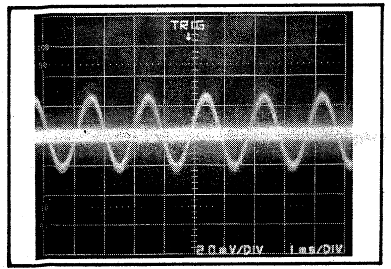
❸ $\overline{\text{RD}}$



❹

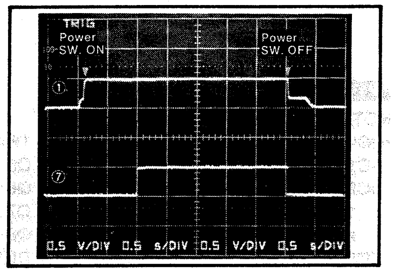


❻



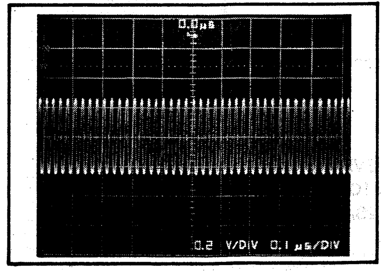
- Upper Keyboard..................C4 Key

❼

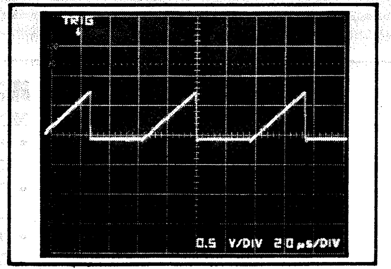


- Power SW............................ON → OFF

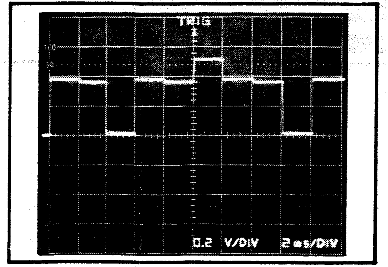
❽ X2, 40MHz



⓮



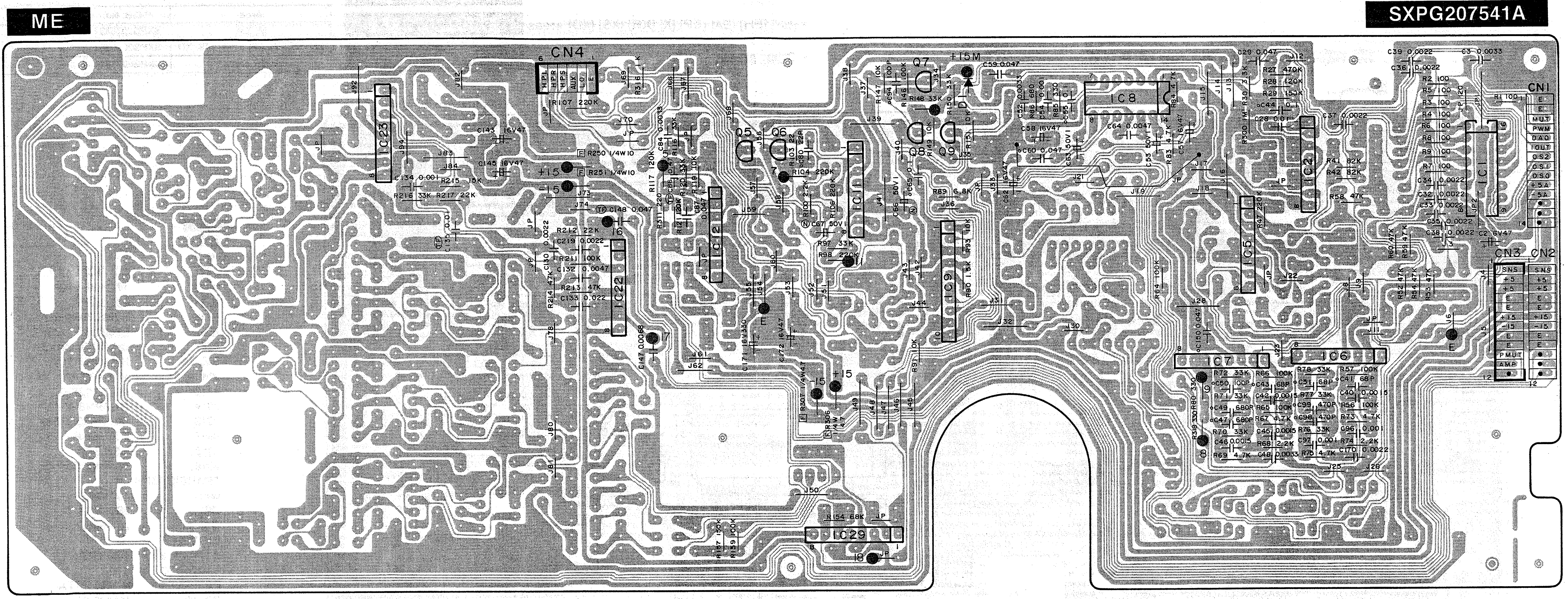
⓯

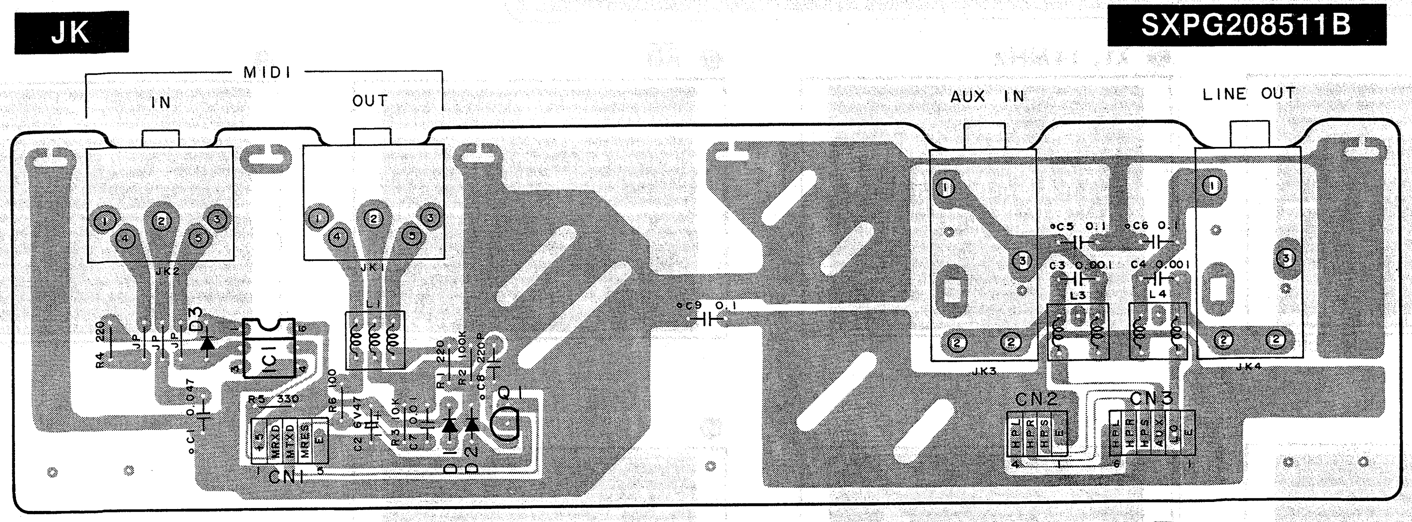


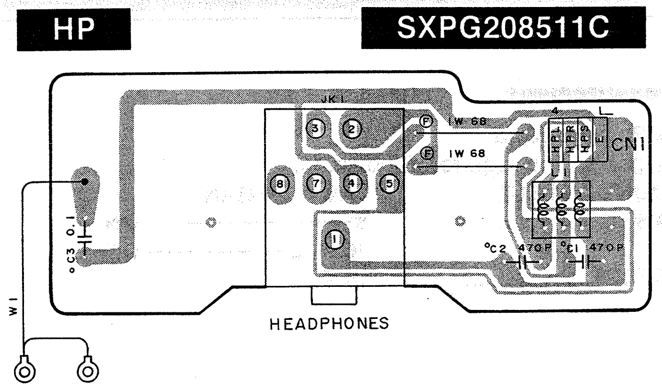
- MAIN VOLUME...................MAX
- EXP. PEDAL.........................MAX

ME **JK** **HP**

MIXING & EFFECT, JACK AND HEADPHONES CIRCUIT BOARD


ME
SXPG207541A
CN4
CN1
CN2
CN3
IC1
IC2
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC22
IC23
IC29
Q5
Q6
Q7
Q8
Q9
D1
+15M
+15
-15


JK
SXPG208511B
MIDI
IN
OUT
AUX IN
LINE OUT
JK1
JK2
JK3
JK4
IC1
Q1
D1
D2
D3
CN1
CN2
CN3


HP
SXPG208511C
JK1
CN1
HEADPHONES
W1

JK

NOTES:

- IC
  - IC1: SVIGTLP513
- TRANSISTOR
  - Q1: 2SA1015-GR
- DIODES
  - D1, 2: MA165TA5

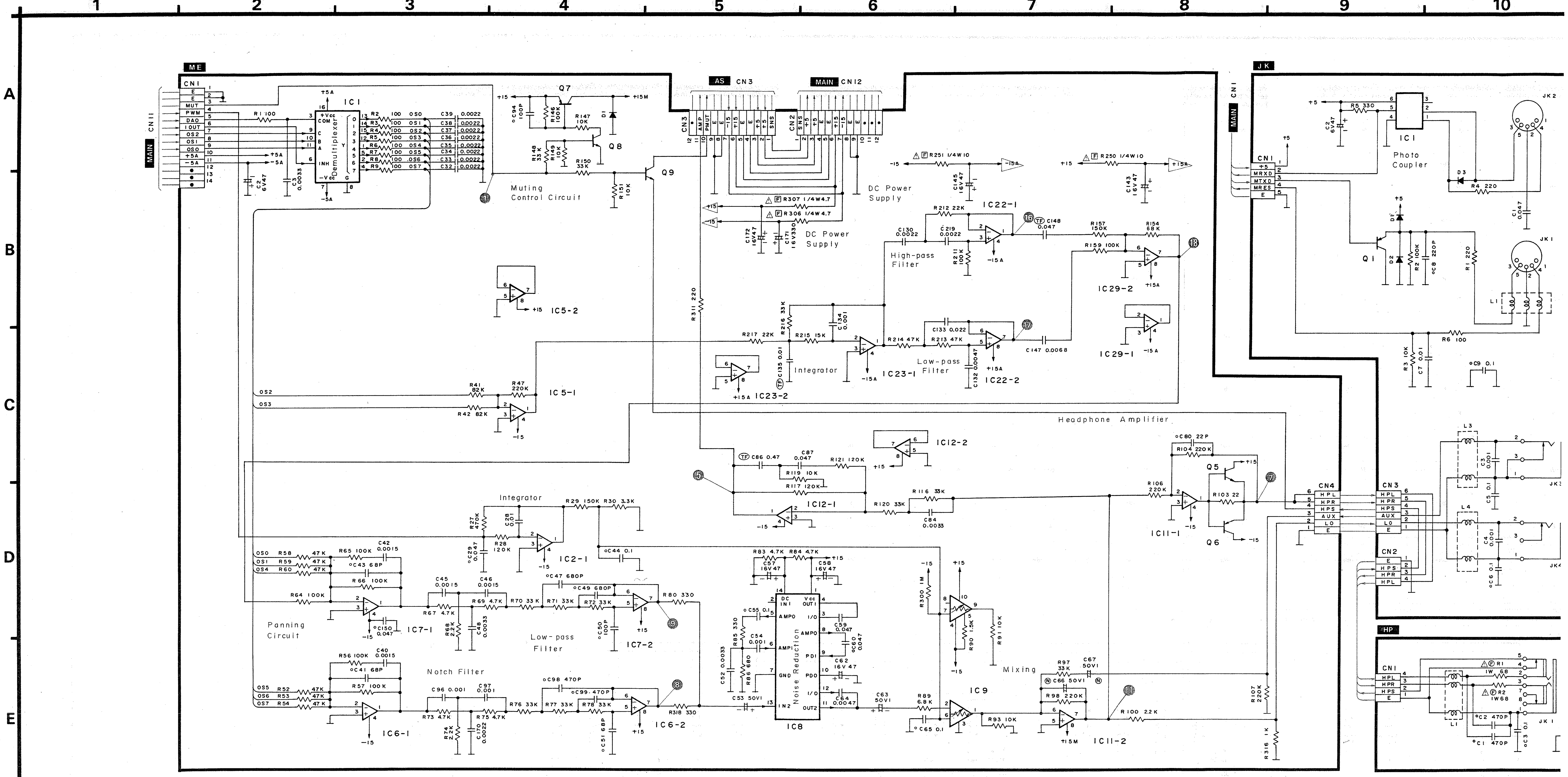
ME

NOTES:

- IC'S
  - IC1: SVIGT74H4051
  - IC2, 5~7, 11, 12, 22, 23, 29: SVIGM5218L
  - IC8: SVIGLM1894N
  - IC9: SVIGM5241L
- TRANSISTORS
  - Q5: 2SC3940ARS
  - Q6: 2SA1534ARS
  - Q7: 2SA1015-GR
  - Q8, 9: 2SC1815GR
- DIODE
  - D1: EK04

ME **JK** **HP**

MIXING & EFFECT, JACK AND HEADPHONES CIRCUIT DIAGRAM

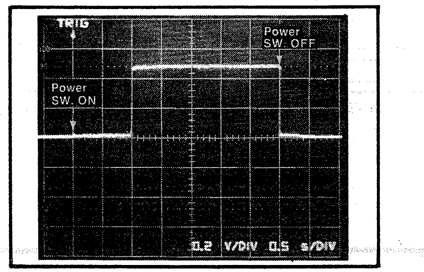


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
ME
JK
HP
MAIN
AS CN3
MAIN CN12
CN11
CN1
IC1
Demultiplexer
Q7
Q8
Q9
Muting Control Circuit
DC Power Supply
High-pass Filter
IC22-1
IC22-2
IC23-1
IC23-2
Integrator
Low-pass Filter
IC29-1
IC29-2
IC5-1
IC5-2
IC12-1
IC12-2
Headphone Amplifier
Q5
Q6
IC11-1
IC11-2
CN4
IC2-1
Panning Circuit
IC7-1
IC7-2
Notch Filter
IC6-1
IC6-2
IC8
Noise Reduction
IC9
Mixing
Photo Coupler
JK2
JK1
Q1
L1
CN3
CN2
L3
L4

Waveform measurement

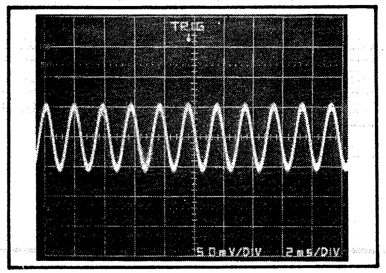
1. Turn on the Power button.
2. Set the E. organ to the required followings.
   - •UPPER SOUND SELECT .... TAB & ORGAN
   - TAB .... 8'———————ON
   - 16' 4' 2'——————OFF
   - EFFECT .... OFF

❶



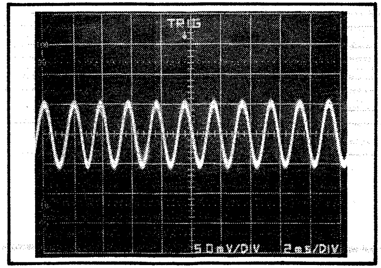
• Power SW.............................ON → OFF

❺



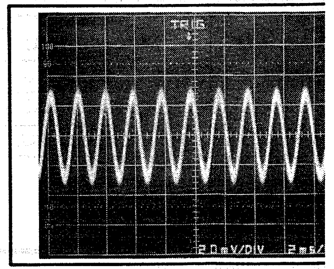
• MAIN VOL. ....MAX
• EXP. PEDAL..........................MAX
• Upper Keyboard..................C4 Key

❼



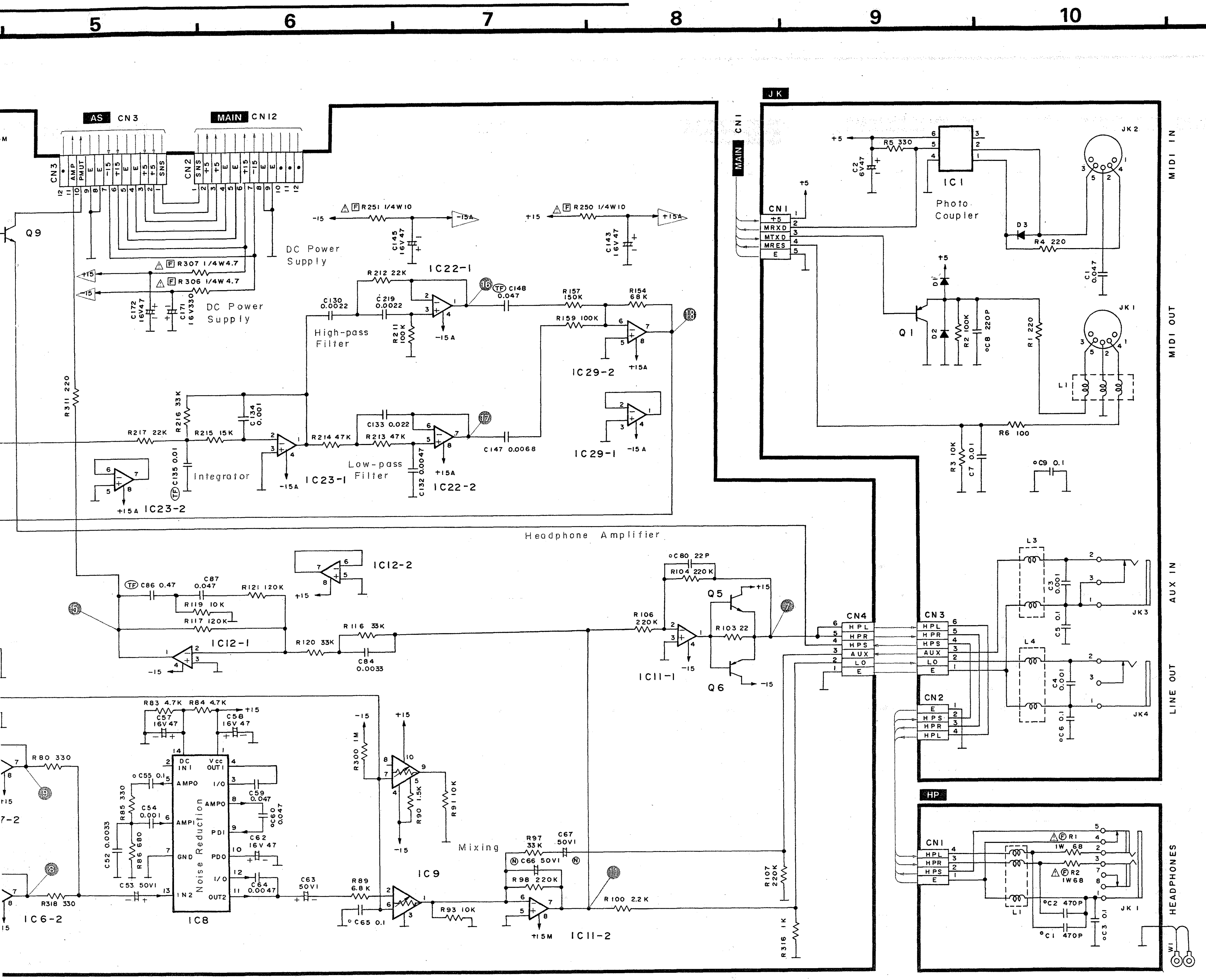
• MAIN VOL. ....MAX
• EXP. PEDAL..........................MAX
• Upper Keyboard..................C4 Key

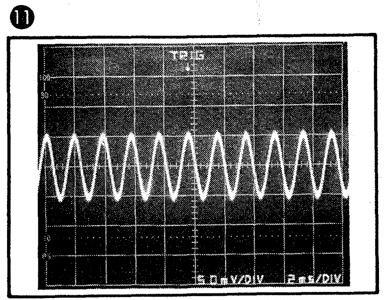
❽



• Upper Keyboard..................C4 Key

AND HEADPHONES CIRCUIT DIAGRAM


5
6
7
8
9
10
11
12
13
14
AS CN3
MAIN CN12
Q9
DC Power Supply
DC Power Supply
R251 1/4W10
R250 1/4W10
R307 1/4W4.7
R306 1/4W4.7
IC22-1
IC22-2
IC23-1
IC23-2
IC29-1
IC29-2
High-pass Filter
Low-pass Filter
Integrator
R311 220
R217 22K
R215 15K
R216 33K
R214 47K
R213 47K
R212 22K
R157 150K
R154 68K
R159 100K
C147 0.0068
C148 0.047
Headphone Amplifier
IC12-1
IC12-2
IC11-1
IC11-2
IC9
IC8
IC6-2
Noise Reduction
Mixing
Q5
Q6
R106 220K
R104 220K
C80 22P
R103 22
R120 33K
R116 33K
R121 120K
R119 10K
R117 120K
C86 0.47
C87 0.047
C84 0.0033
R83 4.7K
R84 4.7K
R80 330
R318 330
R300 1M
R91 10K
R89 6.8K
R93 10K
R97 33K
R98 220K
R100 2.2K
R107 220K
R316 1K
JK
MAIN CN1
IC1
Photo Coupler
Q1
D1
D2
D3
R1 220
R2 100K
R3 10K
R4 220
R5 330
R6 100
JK1
JK2
JK3
JK4
L1
L3
L4
MIDI IN
MIDI OUT
AUX IN
LINE OUT
CN1
CN2
CN3
CN4
HPL
HPR
HPS
AUX
LO
E
+5
MRXD
MTXD
MRES
HP
HEADPHONES
R1 1W 68
R2 1W68
C1 470P
C2 470P
W1
+15
-15
+15A
-15A

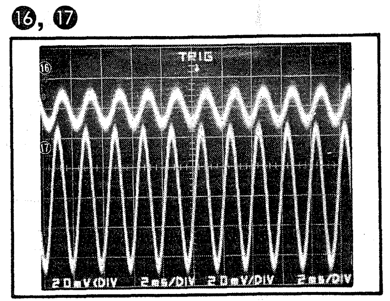


- MAIN VOL. ....MAX
- EXP. PEDAL..........................MAX
- Upper Keyboard..................C4 Key

ME

NOTES:

- IC'S
  - IC1: SVIGT74H4051
  - IC2, 5~7, 11, 12, 22, 23, 29: SVIGM5218L
  - IC8: SVIGLM1894N
  - IC9: SVIGM5241L
- TRANSISTORS
  - Q5: 2SC3940ARS
  - Q6: 2SA1534ARS
  - Q7: 2SA1015-GR
  - Q8, 9: 2SC1815GR
- DIODE
  - D1: EK04

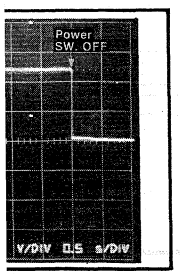


- EFFECT ....ON
- TREMOLO SLOW/FAST ....SLOW
- Upper Keyboard..................C4 Key

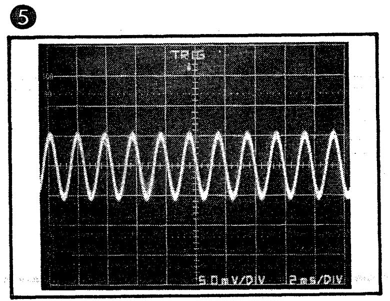
JK

NOTES:

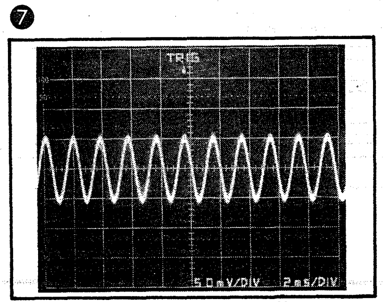
- IC
  - IC1: SVIGTLP513
- TRANSISTOR
  - Q1: 2SA1015-GR
- DIODES
  - D1, 2: MA165TA5



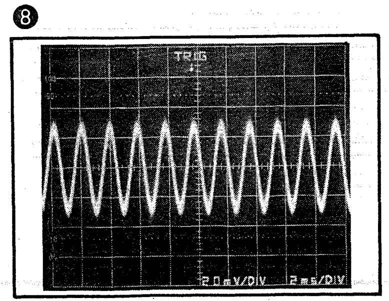
..........ON → OFF



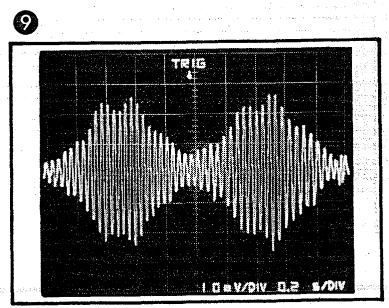
- MAIN VOL. ....MAX
- EXP. PEDAL..........................MAX
- Upper Keyboard..................C4 Key



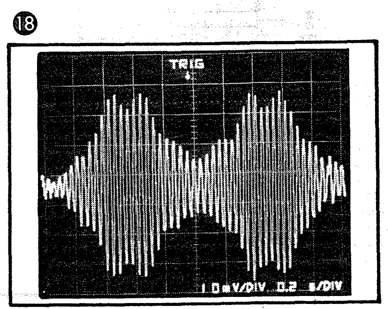
- MAIN VOL. ....MAX
- EXP. PEDAL..........................MAX
- Upper Keyboard..................C4 Key



- Upper Keyboard..................C4 Key



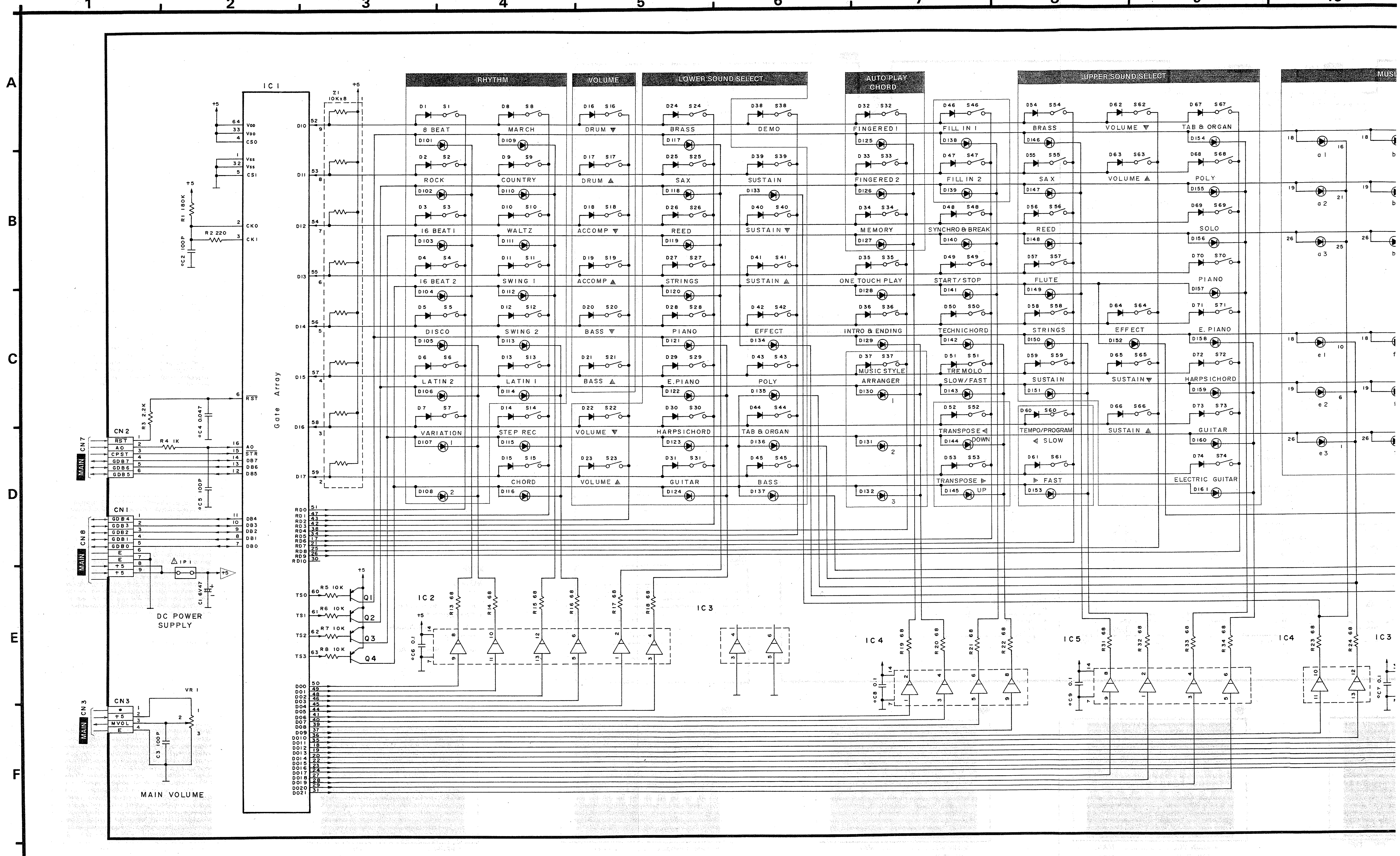
- EFFECT ....ON
- TREMOLO SLOW/FAST ....SLOW
- Upper Keyboard..................C4 Key



- EFFECT ....ON
- TREMOLO SLOW/FAST ....SLOW
- Upper Keyboard..................C4 Key

CPSL

CONTROL PANEL CIRCUIT DIAGRAM



1
2
3
4
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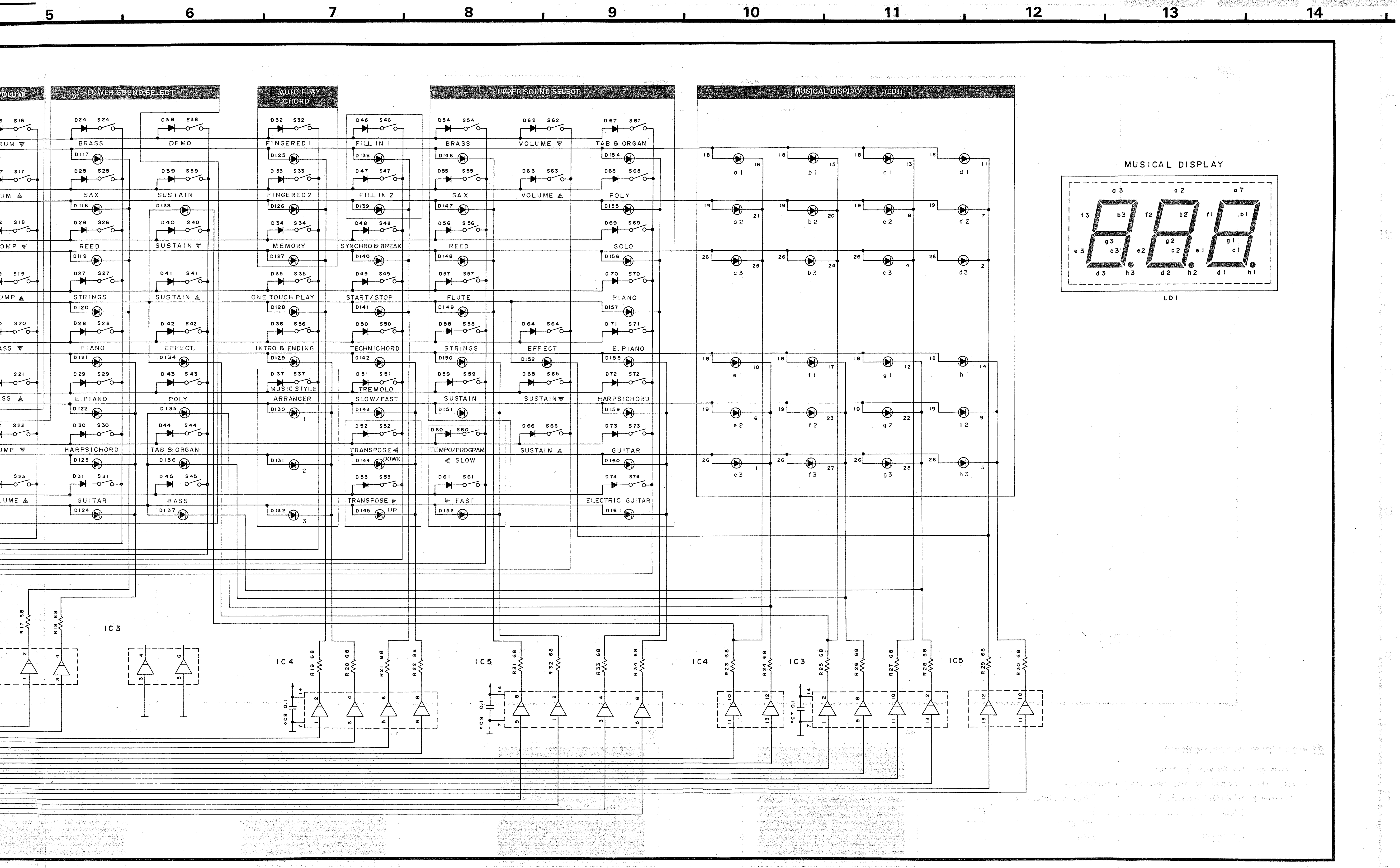
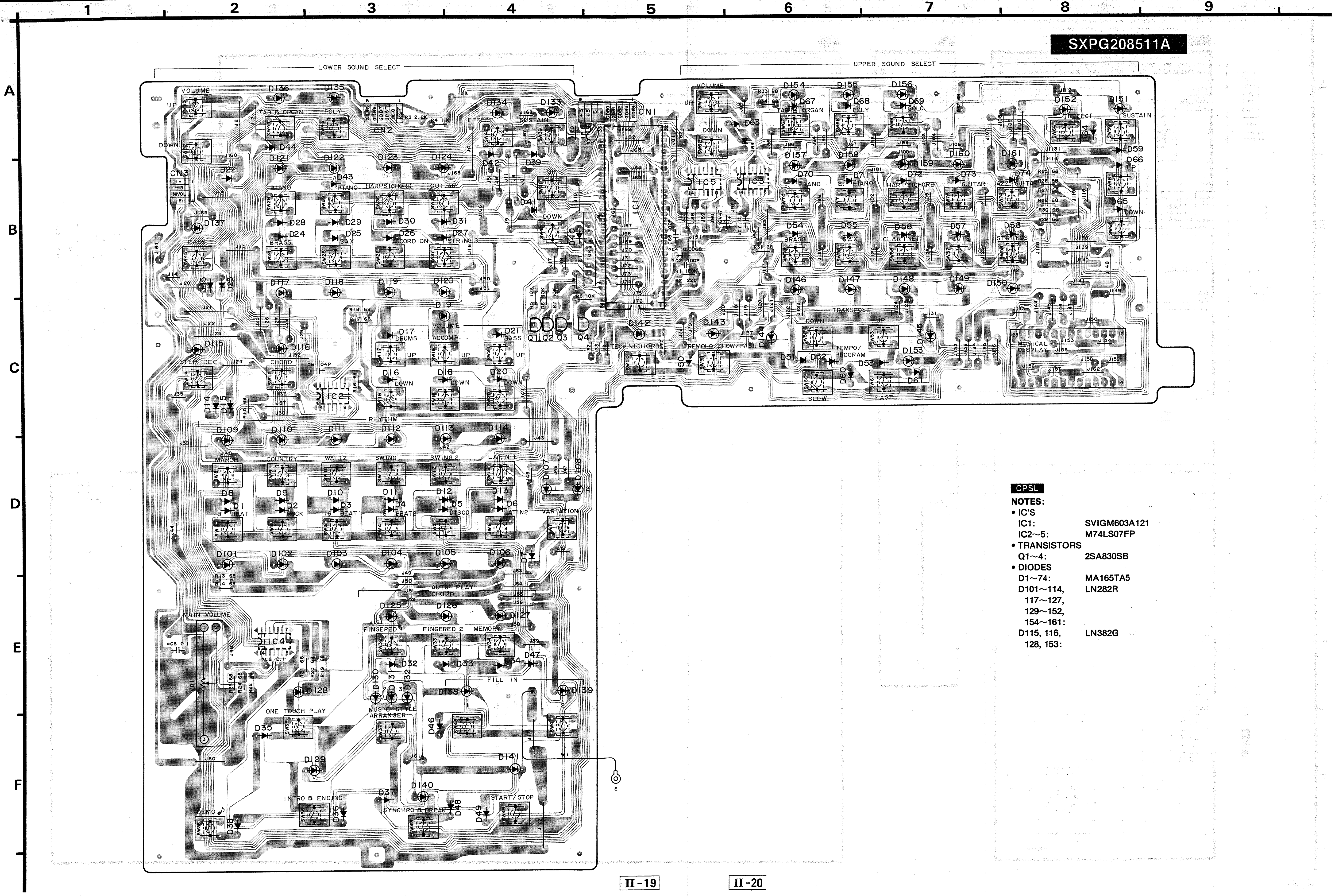
6
7
8
9
10
A
B
C
D
E
F
IC1
Gate Array
VDD
CS0
VSS
CS1
CK0
CK1
RST
A0
STR
DB7
DB6
DB5
DB4
DB3
DB2
DB1
DB0
DI0
DI1
DI2
DI3
DI4
DI5
DI6
DI7
RD0
RD1
RD2
RD3
RD4
RD5
RD6
RD7
RD8
RD9
RD10
TS0
TS1
TS2
TS3
DO0
DO21
Z1 10K×8
+5
R1 180K
R2 220
C2 100P
R3 2.2K
C4 0.047
R4 1K
C5 100P
CN2
CN7
MAIN
CN1
CN8
CN3
GDB7
GDB6
GDB5
GDB4
GDB3
GDB2
GDB1
GDB0
CPST
MVOL
E
IP1
C1 6V47
DC POWER SUPPLY
R5 10K
R6 10K
R7 10K
R8 10K
Q1
Q2
Q3
Q4
VR1
C3 100P
MAIN VOLUME
RHYTHM
8 BEAT
ROCK
16 BEAT 1
16 BEAT 2
DISCO
LATIN 2
VARIATION
MARCH
COUNTRY
WALTZ
SWING 1
SWING 2
LATIN 1
STEP REC
CHORD
VOLUME
DRUM ▼
DRUM ▲
ACCOMP ▼
ACCOMP ▲
BASS ▼
BASS ▲
VOLUME ▼
VOLUME ▲
LOWER SOUND SELECT
BRASS
SAX
REED
STRINGS
PIANO
E.PIANO
HARPSICHORD
GUITAR
DEMO
SUSTAIN
SUSTAIN ▼
SUSTAIN ▲
EFFECT
POLY
TAB & ORGAN
BASS
AUTO PLAY CHORD
FINGERED 1
FINGERED 2
MEMORY
ONE TOUCH PLAY
INTRO & ENDING
MUSIC STYLE ARRANGER
FILL IN 1
FILL IN 2
SYNCHRO & BREAK
START/STOP
TECHNICHORD
TREMOLO SLOW/FAST
TRANSPOSE ◀ DOWN
TRANSPOSE ▶ UP
UPPER SOUND SELECT
BRASS
SAX
REED
FLUTE
STRINGS
SUSTAIN
TEMPO/PROGRAM ◀ SLOW
▶ FAST
VOLUME ▼
VOLUME ▲
EFFECT
SUSTAIN ▼
SUSTAIN ▲
TAB & ORGAN
POLY
SOLO
PIANO
E. PIANO
HARPSICHORD
GUITAR
ELECTRIC GUITAR
MUSI
IC2
IC3
IC4
IC5
C6 0.1
C7 0.1
C8 0.1
C9 0.1
R13 68
R14 68
R15 68
R16 68
R17 68
R18 68
R19 68
R20 68
R21 68
R22 68
R23 68
R24 68
R31 68
R32 68
R33 68
R34 68
a1
a2
a3
e1
e2
e3


5
6
7
8
9
10
11
12
13
14
VOLUME
LOWER SOUND SELECT
BRASS
SAX
REED
STRINGS
PIANO
E.PIANO
HARPSICHORD
GUITAR
DEMO
SUSTAIN
SUSTAIN ▼
SUSTAIN ▲
EFFECT
POLY
TAB & ORGAN
BASS
AUTO PLAY CHORD
FINGERED1
FINGERED2
MEMORY
ONE TOUCH PLAY
INTRO & ENDING
MUSIC STYLE
ARRANGER
FILL IN 1
FILL IN 2
SYNCHRO & BREAK
START/STOP
TECHNICHORD
TREMOLO
SLOW/FAST
TRANSPOSE ◀
DOWN
TRANSPOSE ▶
UP
UPPER SOUND SELECT
BRASS
SAX
REED
FLUTE
STRINGS
SUSTAIN
TEMPO/PROGRAM
◀ SLOW
▶ FAST
VOLUME ▼
VOLUME ▲
EFFECT
SUSTAIN ▼
SUSTAIN ▲
TAB & ORGAN
POLY
SOLO
PIANO
E. PIANO
HARPSICHORD
GUITAR
ELECTRIC GUITAR
MUSICAL DISPLAY (LD1)
MUSICAL DISPLAY
LD1
IC3
IC4
IC5
IC4
IC3
IC5
R17 68
R18 68
R19 68
R20 68
R21 68
R22 68
R31 68
R32 68
R33 68
R34 68
R23 68
R24 68
R25 68
R26 68
R27 68
R28 68
R29 68
R30 68
C8 0.1
C9 0.1
C7 0.1

CPSL CONTROL PANEL CIRCUIT BOARD


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
SXPG208511A
LOWER SOUND SELECT
UPPER SOUND SELECT
VOLUME
UP
DOWN
TAB & ORGAN
POLY
CN1
CN2
CN3
EFFECT
SUSTAIN
PIANO
E. PIANO
HARPSICHORD
GUITAR
BRASS
SAX
ACCORDION
STRINGS
BASS
IC1
IC2
IC3
IC4
IC5
ORGAN
SOLO
JAZZ GUITAR
CLARINET
FLUTE
TRANSPOSE
TEMPO/PROGRAM
SLOW
FAST
TECHNICHORD
TREMOLO SLOW/FAST
MUSICAL DISPLAY
DRUMS
ACCOMP
STEP REC
CHORD
RHYTHM
MARCH
COUNTRY
WALTZ
SWING 1
SWING 2
LATIN
BEAT
ROCK
BEAT1
BEAT2
DISCO
LATIN2
VARIATION
AUTO PLAY CHORD
MAIN VOLUME
FINGERED
FINGERED 2
MEMORY
FILL IN
ONE TOUCH PLAY
MUSIC STYLE ARRANGER
INTRO & ENDING
SYNCHRO & BREAK
START/STOP
DEMO
Q1 Q2 Q3 Q4
VR1
E

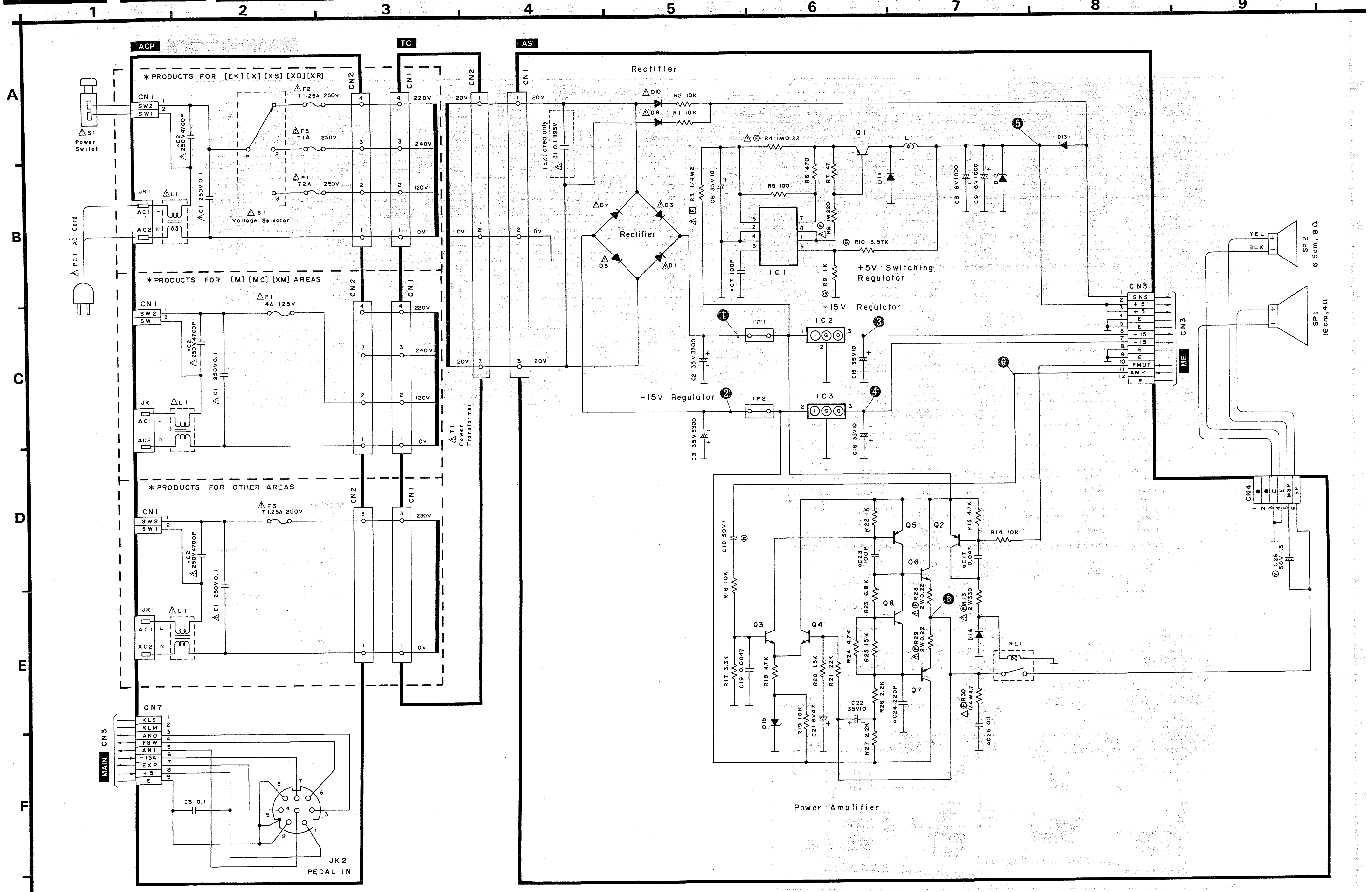
CPSL

NOTES:

• IC'S	
IC1:	SVIGM603A121
IC2～5:	M74LS07FP
• TRANSISTORS	
Q1～4:	2SA830SB
• DIODES	
D1～74:	MA165TA5
D101～114, 117～127, 129～152, 154～161:	LN282R
D115, 116, 128, 153:	LN382G

ACP **AS**

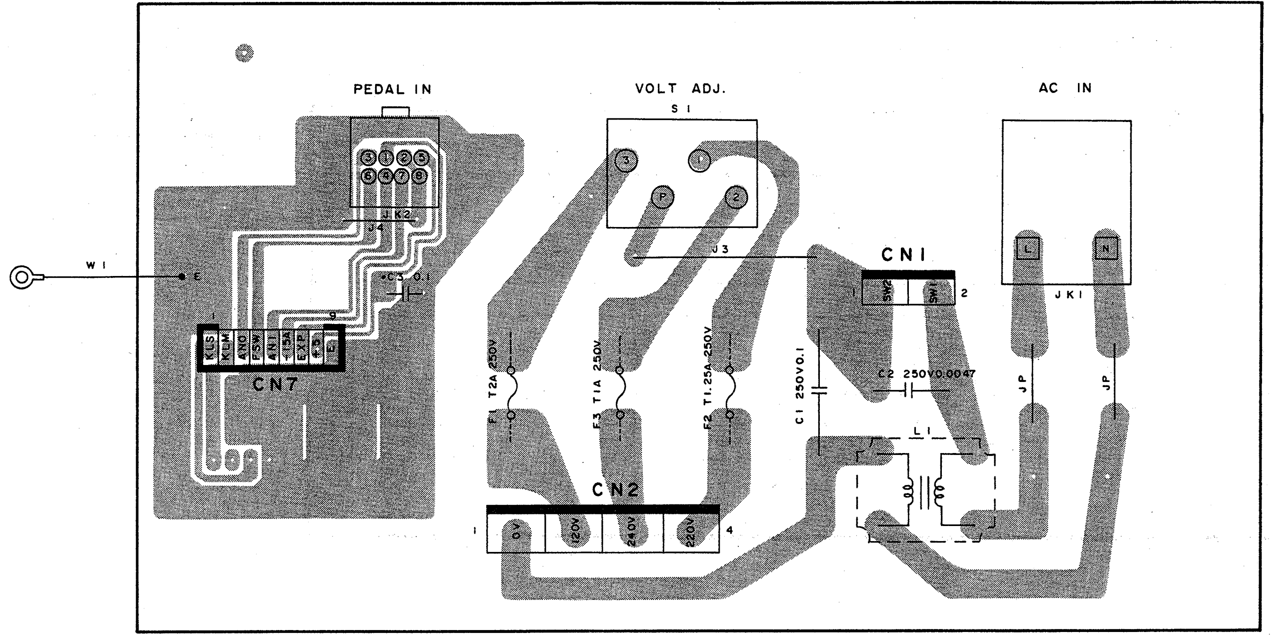
AC POWER SUPPLY AND AMP & POWER SUPPLY CIRCUIT DIAGRAM


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
ACP
TC
AS
* PRODUCTS FOR [EK] [X] [XS] [XD] [XR]
* PRODUCTS FOR [M] [MC] [XM] AREAS
* PRODUCTS FOR OTHER AREAS
CN1
CN2
SW2
SW1
S1 Power Switch
PC1 AC Cord
JK1
AC1
AC2
L1
C2 250V4700P
C1 250V0.1
F2 T1.25A 250V
F3 T1A 250V
F1 T2A 250V
F1 4A 125V
F3 T1.25A 250V
S1 Voltage Selector
220V
240V
120V
230V
0V
20V
T1 Power Transformer
[EZ] area only
C1 0.1 125V
Rectifier
D10
D9
R2 10K
R1 10K
D7
D3
D5
D1
Q1
L1
D13
R4 1W0.22
R3 1/4W2
C6 35V10
R5 100
R6 470
R7 47
R8 1/4W220
D11
C8 6V1000
C9 6V1000
D12
IC1
C7 100P
R9 1K
R10 3.57K
+5V Switching Regulator
+15V Regulator
-15V Regulator
IP1
IP2
IC2
IC3
C2 35V3300
C3 35V3300
C15 35V10
C16 35V10
CN3
SNS
+5
E
+15
-15
PMUT
AMP
ME
SP2 6.5cm, 8Ω
SP1 16cm, 4Ω
YEL
BLK
CN4
MSP
SP
C26 50V1.5
C18 50V1
R16 10K
R17 3.3K
C19 0.0047
R18 4.7K
D15
R19 10K
C21 6V47
R20 1.5K
R21 22K
C22 35V10
R22 1K
C23 100P
R23 6.8K
R24 4.7K
R25 15K
R26 2.2K
R27 2.2K
C24 220P
R28 2W0.22
R29 2W0.22
R15 4.7K
R14 10K
C17 0.047
R13 2W330
D14
RL1
R30 1/4W4.7
C25 0.1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Power Amplifier
CN7
KLS
KLM
ANO
FSW
ANI
-15A
EXP
MAIN
C3 0.1
JK2 PEDAL IN

AC POWER SUPPLY AND AMP & POWER SUPPLY CIRCUIT BOARD

1 2 3 4 5 6 7 8 9 10

ACP • [EK] [X] [XS] [XD] areas **SXPG209541C** • [XR] area **SXPG209561C**


A
B
PEDAL IN
JK2
J4
W1
E
C3 0.1
CN7
K1.S
K1.M
S.W
F.SW
4.N1
4.N2
EXP
E
VOLT ADJ.
S1
J3
CN1
SW2
SW1
F1 T2A 250V
F3 T1A 250V
F2 T1.25A 250V
C1 250V0.1
C2 250V0.0047
L1
CN2
0V
120V
240V
220V
AC IN
JK1
L
N
JP

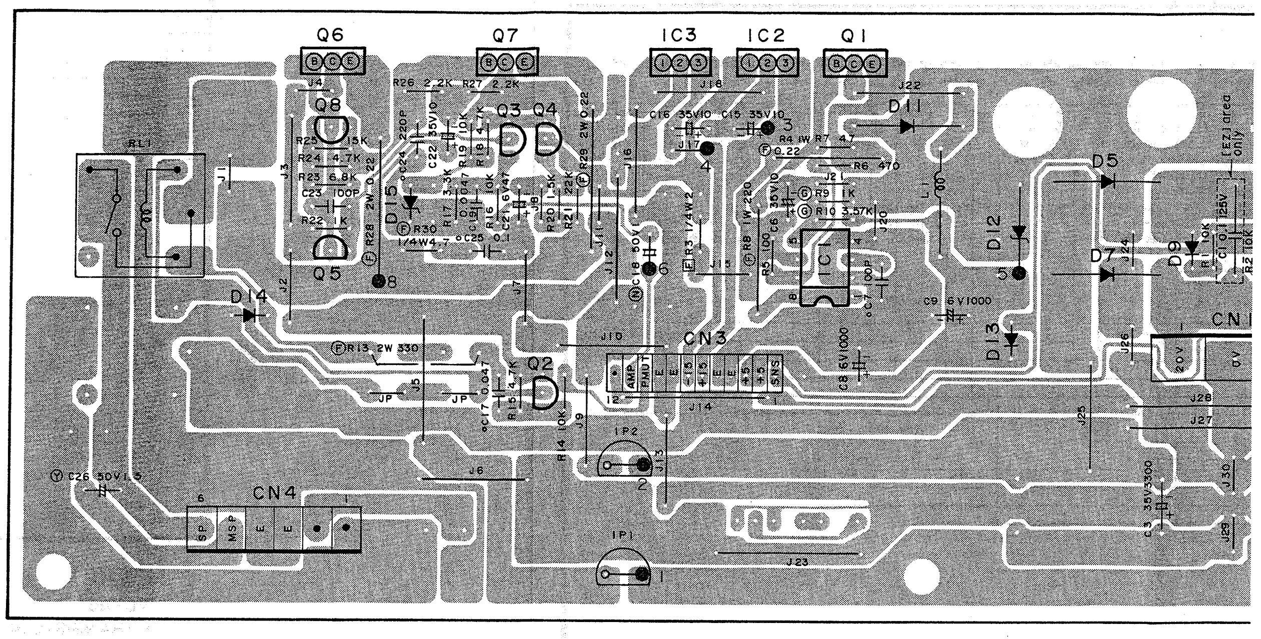
ACP

NOTES:

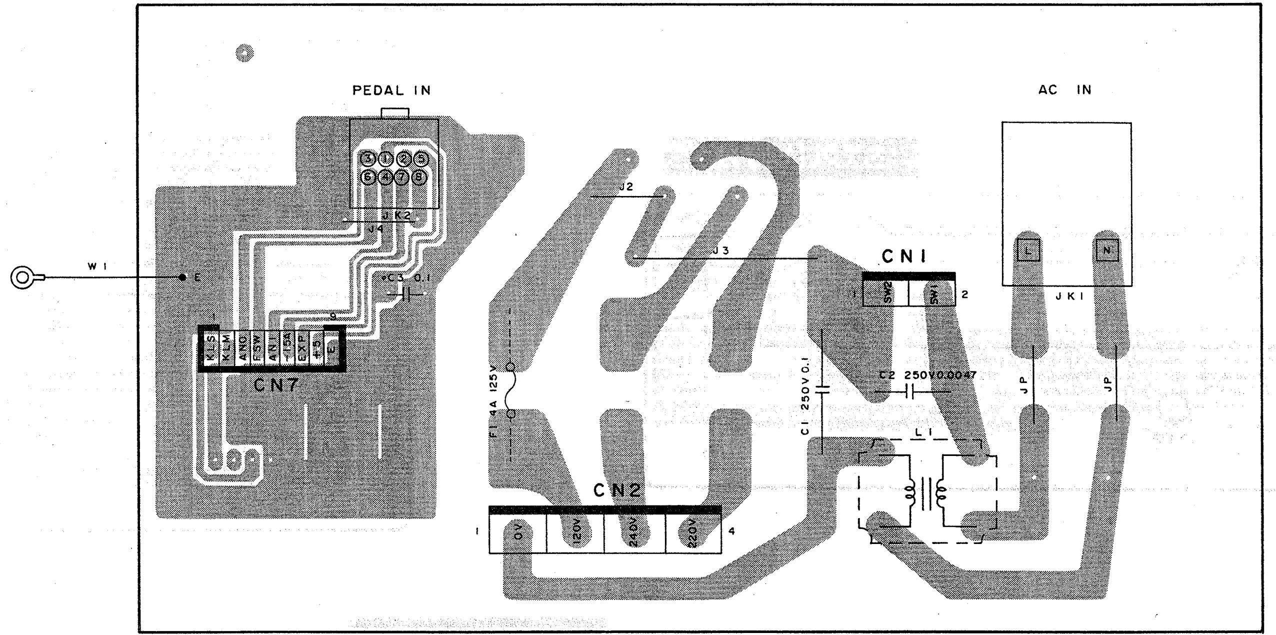
- **FUSES**

F1:	XBA2C20TB0
F2:	XBA2C12TB0
F3:	XBA2C10TB0

AS • [EZ]


Q6
Q7
IC3
IC2
Q1
RL1
Q8
Q3 Q4
Q5
Q2
D11
D5
D7
D9
D12
D13
D14
D15
R26 2.2K
R27 2.2K
R23 15K
R24 4.7K
R25 6.8K
C23 100P
R22 1K
C16 35V10
C15 35V10
R4 1W
R7 4.7
R6 470
C6
R9 1K
R10 3.57K
C9 6.3V1000
R13 2W 330
C8 6.3V1000
C26 50V1
IC1
CN3
CN4
IP1
IP2
J1
J2
J3
J5
J6
J7
J10
J14
J15
J16
J17
J18
J21
J22
J23
J25
J26
J27
J28
J29
J30
[EZ] area only
SP
MSP
E
AMP
PMUT
+15
-15
SNS
20V
0V
CN1
C3 35V3300

ACP • [M] [MC] [XM] areas **SXPG209531C**


C
D
E
PEDAL IN
JK2
J4
W1
E
C3 0.1
CN7
J2
J3
CN1
SW2
SW1
F1 4A 125V
C1 250V0.1
C2 250V0.0047
L1
CN2
0V
120V
240V
220V
AC IN
JK1
L
N
JP

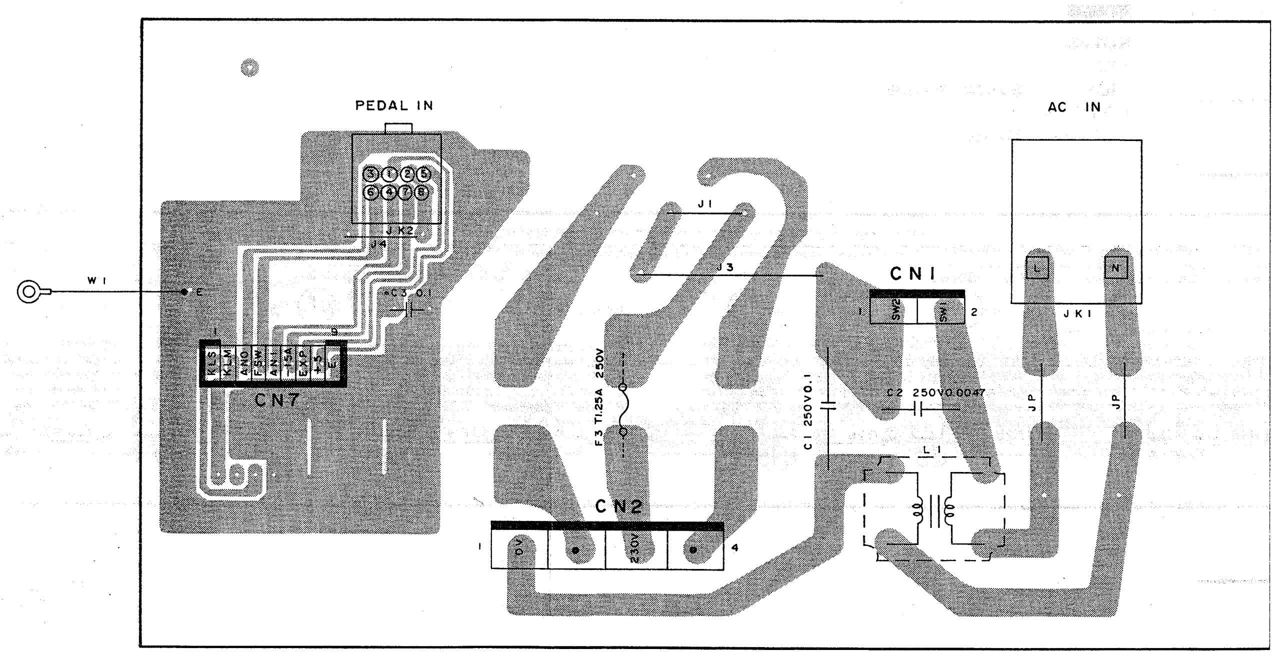
ACP

NOTE:

- **FUSE**

F1: XBA1C40NU100

ACP • [XL] area **SXPG209551C** • Other areas **SXPG209511C**

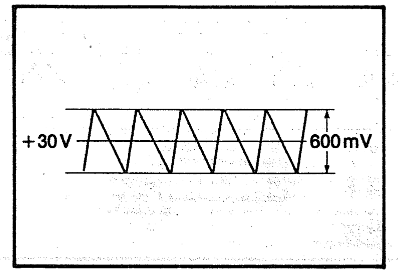

PEDAL IN
JK2
J4
W1
E
C3 0.1
CN7
J1
J3
CN1
SW2
SW1
F3 T1.25A 250V
C1 250V0.1
C2 250V0.0047
L1
CN2
0V
230V
AC IN
JK1
L
N
JP

■ Waveform measurement

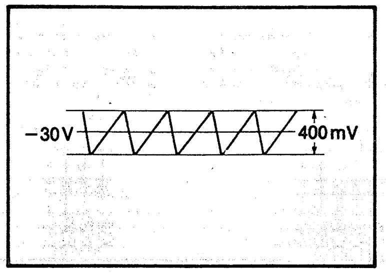
1. Turn on the Power button
2. Set the E. organ to the required followings.

•UPPER SOUND SELECT .... TAB & ORGAN
TAB .... 8'————————ON
16' 4' 2'————————OFF
EFFECT .... OFF

❶



❷



❸

DC+15V

❹

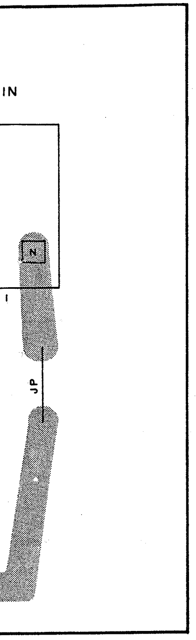
DC−15V

❺

& POWER SUPPLY CIRCUIT BOARD

5 6 7 8 9 10 11 12 13 14

G209561C

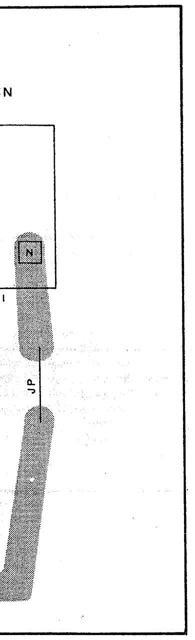


ACP

NOTES:

- FUSES
  - F1: XBA2C20TB0
  - F2: XBA2C12TB0
  - F3: XBA2C10TB0

G209531C

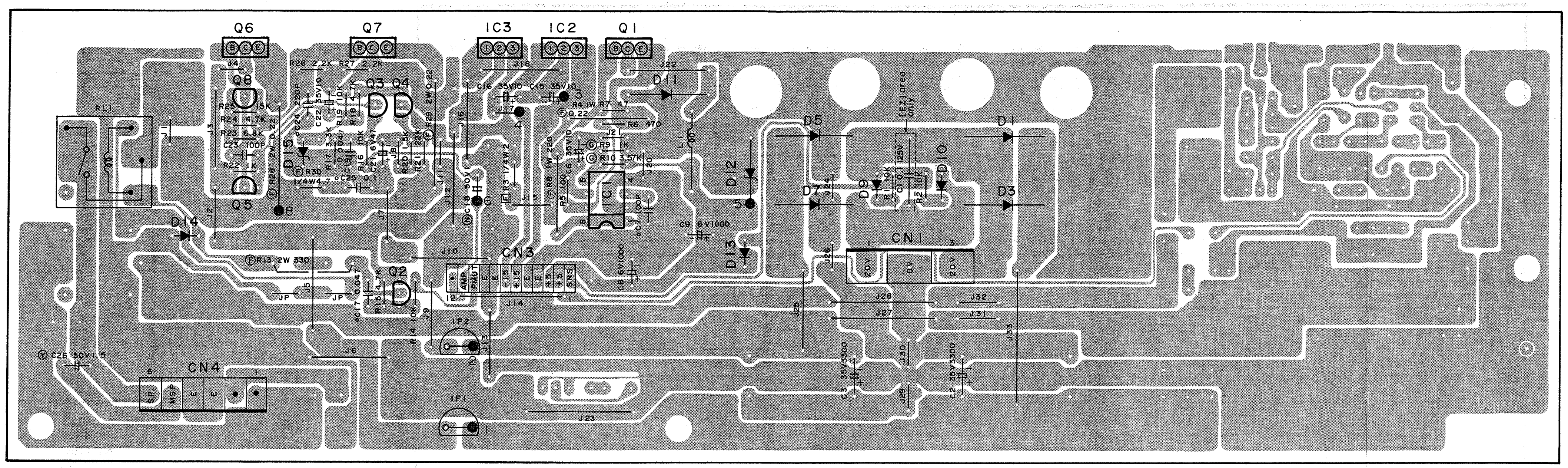


ACP

NOTE:

- FUSE
  - F1: XBA1C40NU100

AS • [EZ] area **SXPG2095221A** • Other areas **SXPG2095211A**

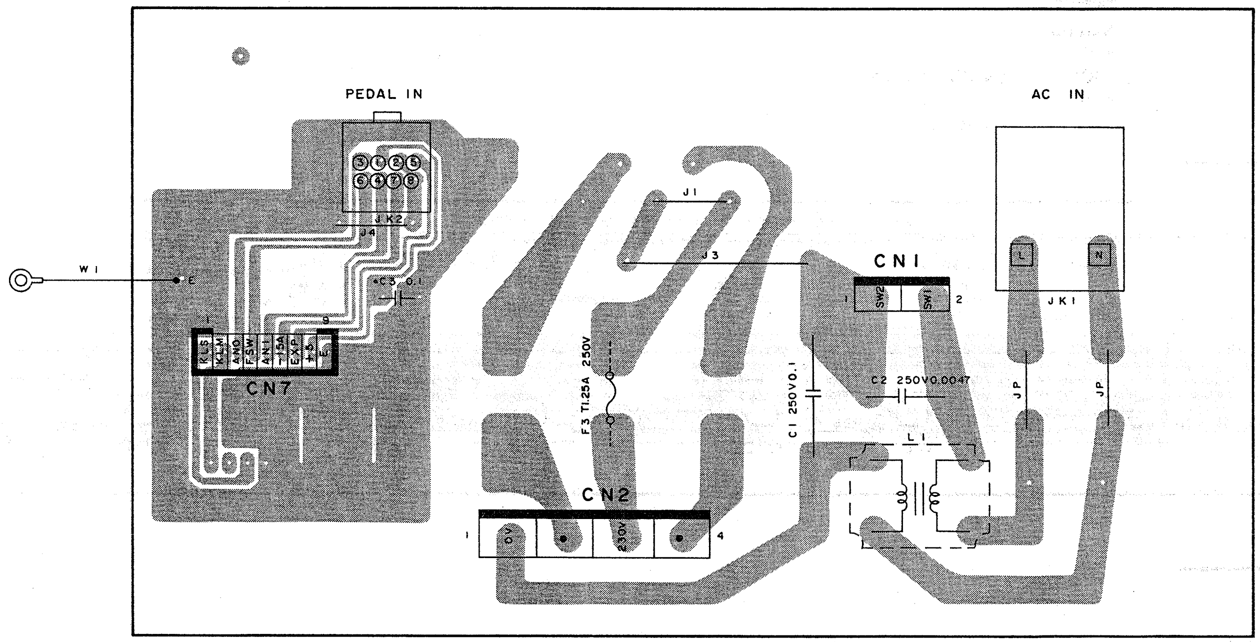

Q6
Q7
IC3
IC2
Q1
Q8
Q3 Q4
Q5
Q2
IC1
RL1
D1
D3
D5
D7
D9
D10
D11
D12
D13
D14
D15
CN1
CN3
CN4
IP1
IP2
R13 2W 330
R26 2.2K
R27 2.2K
R25 15K
R24 4.7K
R23 6.8K
C23 100P
R22 1K
C16 35V10
C15 35V10
R4 1W R7 47
R6 470
R9 1K
R10 3.57K
C9 6V1000
C26 50V1.5
C3 35V3300
C2 35V3300
[EZ] area only
20V
0V
20V
SP
MSP
E
E
E

AS

NOTES:

- IC'S
  - IC1: SVIGM5291P
  - IC2: SVIGM5F7815
  - IC3: SVIGM5F7915
- TRANSISTORS
  - Q1: 2SA1643
  - Q2: 2SA1015-GR
  - Q3, 4, 8: 2SC1815GR
  - Q5: 2SA1123S
  - Q6: 2SD1277A
  - Q7: 2SB951A
- DIODES
  - D1, 3, 5, 7: SVDGS3V20-15
  - D9, 10: SVDGERA1502
  - D11: SVDGRK14S
  - D12: MA2062LF
  - D13, 14: MA165TA5
  - D15: MA4062

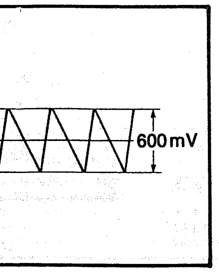
ACP • [XL] area **SXPG209551C** • Other areas **SXPG209511C**


PEDAL IN
AC IN
JK2
JK1
W1
E
C3 0.1
CN7
J1
J3
CN1
SW2
SW1
C2 250V0.0047
C1 250V0.1
F3 T1.25A 250V
L1
CN2
0V
230V
L
N
JP
JP

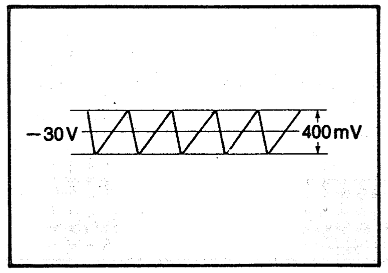
ACP

NOTE:

- FUSE
  - F3: XBA2C12TB0



②



③

DC+15V

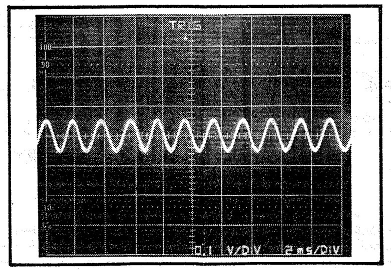
④

DC−15V

⑤

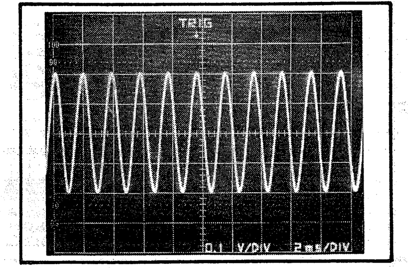
DC+5V

⑥



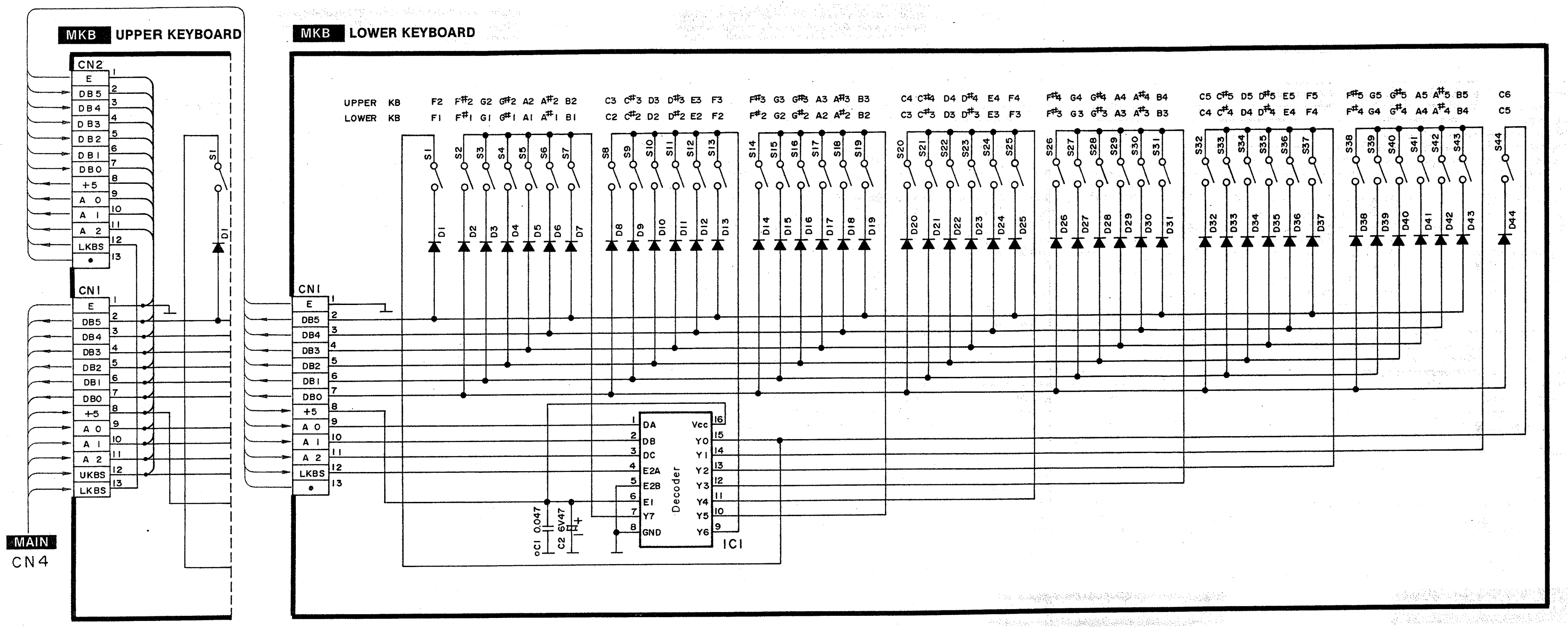
- MAIN VOL. ....MAX
- EXP. PEDAL.......................MAX
- Upper Keyboard.................C4 Key

⑧

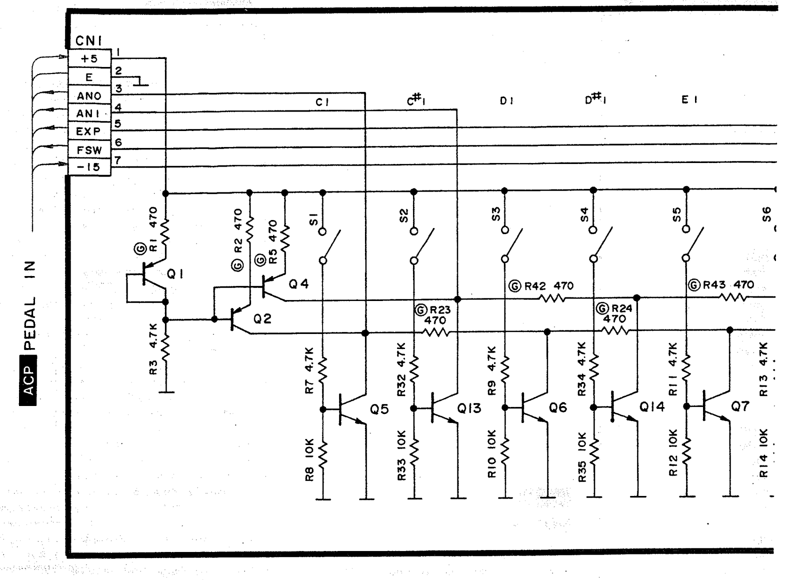


- MAIN VOL. ....MAX
- EXP. PEDAL.......................MAX
- Upper Keyboard.................C4 Key

MKB MANUAL KEYBOARD CIRCUIT DIAGRAM


MKB UPPER KEYBOARD
MKB LOWER KEYBOARD
CN2
CN1
MAIN CN4
UPPER KB
LOWER KB
Decoder
IC1
C1 0.047
C2 6V47

PKB EXP PEDAL KEYB


CN1
+5
E
ANO
AN1
EXP
FSW
-15
ACP PEDAL IN
Q1
Q2
Q4
Q5
Q13
Q6
Q14
C1
C#1
D1
D#1
E1

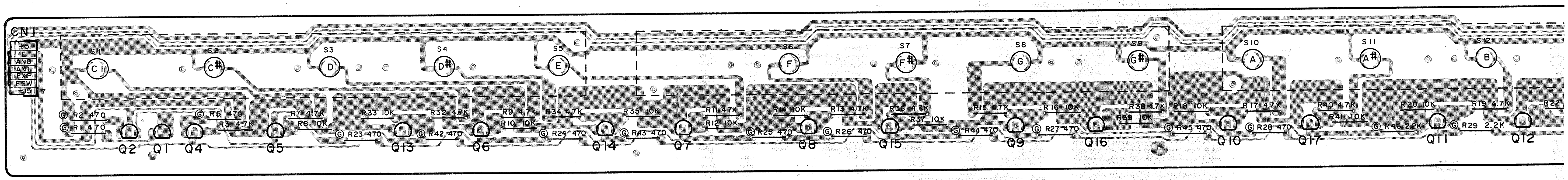
PKB

NOTES:
- TRANSISTORS
  - Q1, 2, 4: 2SA1015-GR
  - Q5~17: 2SC2320LFG

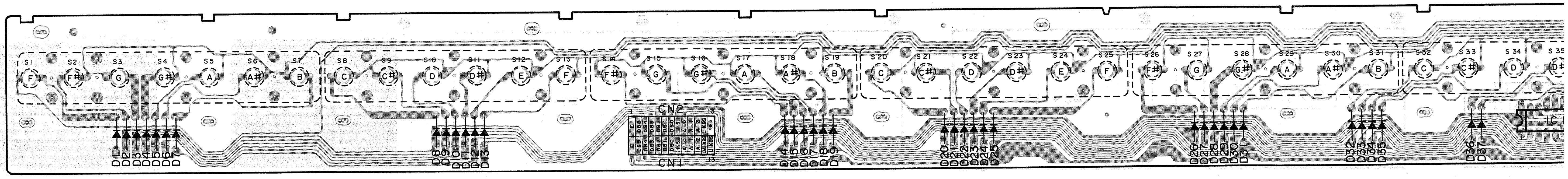
MKB

NOTES:
- IC
  - IC1: SVIGM74LS138
- DIODES
  - D1~44: MA162A

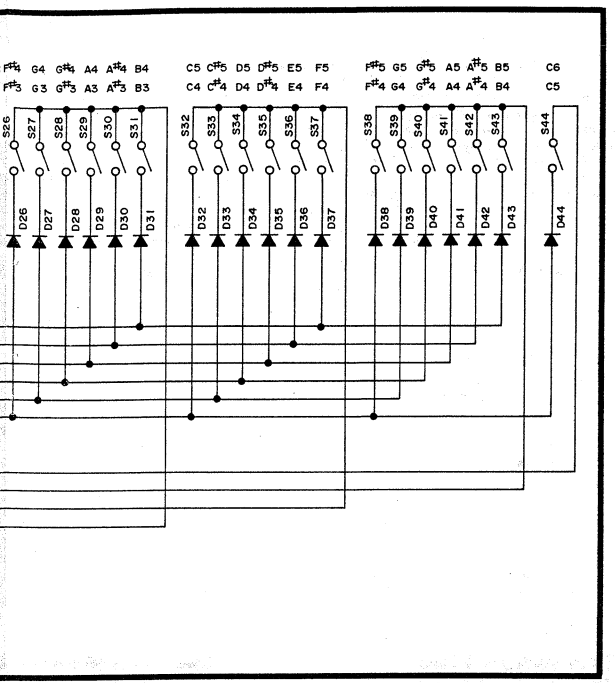
PKB PEDAL KEYBOARD CIRCUIT BOARD

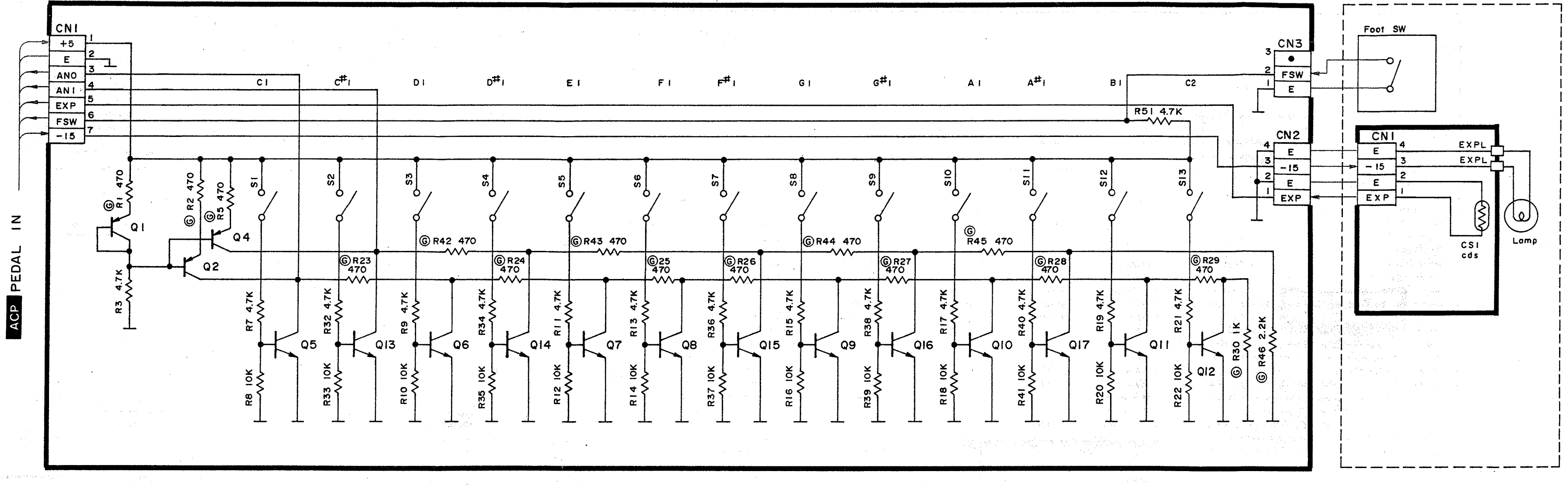

CN1
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
S12

MKB MANUAL KEYBOARD CIRCUIT BOARD



PKB EXP PEDAL KEYBOARD AND EXPRESSION CIRCUIT DIAGRAM


F#5 G4 G#4 A4 A#4 B4
F#4 G3 G#3 A3 A#3 B3
C5 C#5 D5 D#5 E5 F5
C4 C#4 D4 D#4 E4 F4
F#5 G5 G#5 A5 A#5 B5
F#4 G4 G#4 A4 A#4 B4
C6
C5
S26 S27 S28 S29 S30 S31 S32 S33 S34 S35 S36 S37 S38 S39 S40 S41 S42 S43 S44
D26 D27 D28 D29 D30 D31 D32 D33 D34 D35 D36 D37 D38 D39 D40 D41 D42 D43 D44


CN1
+5
E
ANO
ANI
EXP
FSW
-15
1 2 3 4 5 6 7
ACP PEDAL IN
C1 C#1 D1 D#1 E1 F1 F#1 G1 G#1 A1 A#1 B1 C2
S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 S12 S13
R1 470
R2 470
R5 470
R3 4.7K
Q1 Q2 Q4
R23 470
R42 470
R24 470
R43 470
R25 470
R26 470
R44 470
R27 470
R45 470
R28 470
R29 470
R51 4.7K
R7 4.7K R8 10K Q5
R32 4.7K R33 10K Q13
R9 4.7K R10 10K Q6
R34 4.7K R35 10K Q14
R11 4.7K R12 10K Q7
R13 4.7K R14 10K Q8
R36 4.7K R37 10K Q15
R15 4.7K R16 10K Q9
R38 4.7K R39 10K Q16
R17 4.7K R18 10K Q10
R40 4.7K R41 10K Q17
R19 4.7K R20 10K Q11
R21 4.7K R22 10K Q12
R30 1K
R46 2.2K
CN3
FSW
E
CN2
E
-15
E
EXP
Foot SW
CN1
E
-15
E
EXP
EXPL
EXPL
CS1
cds
Lamp

PKB

NOTES:

- TRANSISTORS

Q1, 2, 4:	2SA1015-GR
Q5~17:	2SC2320LFG

MKB

NOTES:

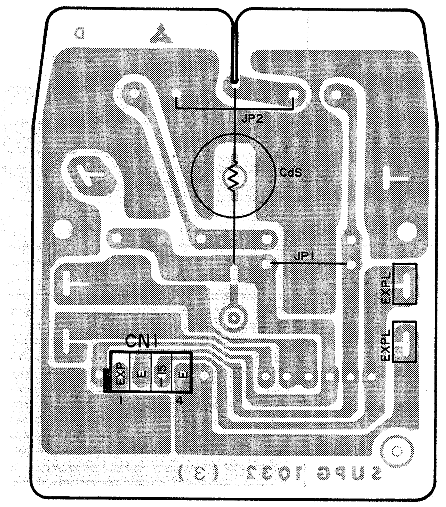
- IC

IC1:	SVIGM74LS138

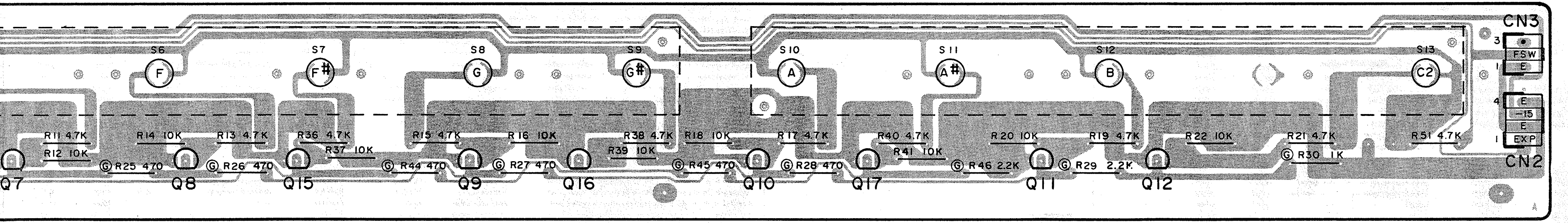
- DIODES

D1~44:	MA162A

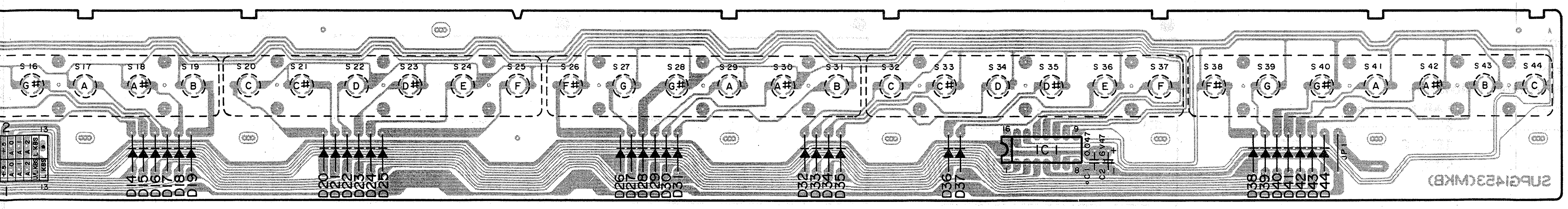
EXP **EXP P.C.B.** SXPG103211


JP2
CdS
JP1
CN1
EXP
E
-15
E
1 4
EXPL
EXPL
SUPG 1032 (3)

SXPG145111


S6 F
S7 F#
S8 G
S9 G#
S10 A
S11 A#
S12 B
S13 C2
CN3
3
FSW
E
1
4
E
-15
E
EXP
1
CN2
R11 4.7K
R12 10K
R14 10K
R13 4.7K
R36 4.7K
R37 10K
R15 4.7K
R16 10K
R38 4.7K
R39 10K
R18 10K
R17 4.7K
R40 4.7K
R41 10K
R20 10K
R19 4.7K
R22 10K
R21 4.7K
R51 4.7K
R25 470
R26 470
R44 470
R27 470
R45 470
R28 470
R46 2.2K
R29 2.2K
R30 1K
Q7 Q8 Q15 Q9 Q16 Q10 Q17 Q11 Q12
A

SXPG145311


S16 G#
S17 A
S18 A#
S19 B
S20 C
S21 C#
S22 D
S23 D#
S24 E
S25 F
S26 F#
S27 G
S28 G#
S29 A
S30 A#
S31 B
S32 C
S33 C#
S34 D
S35 D#
S36 E
S37 F
S38 F#
S39 G
S40 G#
S41 A
S42 A#
S43 B
S44 C
D14 D15 D16 D17 D18 D19
D20 D22 D23 D24 D25
D26 D27 D28 D29 D30 D31
D32 D33 D34 D35
D36 D37
IC1
16 9 8
C1 0.047 16V
D38 D39 D40 D41 D42 D43 D44
JP
SUPG1453(MKB)
13
A

REPLACEMENT PARTS LIST......P.C.B. and Wiring Parts

Notes:

1. Printed circuit board assembly with mark (NLA) is no longer available after production discontinuation of the complete set.
2. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. The "S" mark is service standard parts and may differ from production parts.
4. ○ mark are new parts.
5. For part No. with area mark, check the area when placing an order.

■ PRINTED CIRCUIT BOARD

	NLA	Area	Part No.	Description	Per/Set
○	NLA	M XM	SXPG2073331	MAIN	1
Ⓢ	NLA	Others	SXPG2073311	MAIN	1
○	NLA		SXPG207541A	ME	1
○	NLA		SXPG208511B	JK	1
○	NLA		SXPG208511C	HP	1
○	NLA		SXPG208511A	CPSL	1
○	NLA	M MC XM	SXPG209531C	ACP	1
○	NLA	EK X XS XD	SXPG209541C	ACP	1
○	NLA	XL	SXPG209551C	ACP	1
○	NLA	XR	SXPG209561C	ACP	1
○	NLA	Others	SXPG209511C	ACP	1
○	NLA	EZ	SXPG2095221A	AS	1
○	NLA	Others	SXPG2095211A	AS	1
	NLA		SXPG145311	MKB	2
	NLA		SXPG145111	PKB	1
	NLA		SXPG103211	EXP	1

MAIN MAIN CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
			INTEGRATED CIRCUITS	
○	IC1	M74HC244FP	3-State Buffers	1
	IC2	T74H4051AF	8-channel Multiplexer	1
	IC3	M5238FP	Operational Amplifier	1
	IC4	SVIGD70320GJ	16 bit Microcomputer	1
	IC5	D65012GF-A79	Gate Array	1
○	IC6	QSIGCEN2AX0	4M bit Programmed EP ROM	1
○	IC8	HM65256BLF10	256K bit Pseudo Static RAM	1
	IC11, 12	M74HC00FP	Quad 2-input NAND Gates	2
	IC13	MN73012PGC	Tone Generator LSI 1	1
	IC14	MN73013PGD	Tone Generator LSI 2	1
○	IC16	QSIGM3C04347	4M bit Wave ROM	1
○	IC17	PCM55HP	D-A Converter	1
	IC18	M5238FP	Operational Amplifier	1
	IC19	T74H4051AF	8-channel Multiplexer	1
			TRANSISTORS	
	Q1	2SJ105GR	FET	1
S	Q2	2SC1815GR	Transistor	1
S	Q3	2SA1015-GR	2SA933STRS (SUB. Part)	1
			DIODES	
	D1~4, 7, 8, 101~103	MA165TA5	Diode	9
	D6	MA4051MTA	Zener, 5.1V	1
	D9, 10	MA4056H	Zener, 5.8V	2
			OSCILLATORS	
	X1	QSXG1A1400A	14MHz, Quartz Oscillator	1
	X2	QSXG1B4000B	40MHz, Quartz Oscillator	1
			COMPONENT COMBINATIONS	
	Z1, 2, 4	EXBPI8472JM	4.7kΩ × 8	3
	Z3	EXAMR14A1002	1kΩ/2kΩ, Ladder Network	1
			COILS	
	L1, 101, 102	QLQGT1B600MA	Coil	3
	L15	QLQGT3T150SA	Coil	1
			SEMI-FIXED RESISTOR	
	VR1	EVND4AA00B14	10kΩ B, Offset Adj.	1
			RESISTORS	
	R1	ERDS2TJ184	180kΩ	1
	R2	ERDS2TJ472	4.7kΩ	1
	R3~6	ERDS2TJ102	1kΩ	4
	R7, 8	ERDS2TJ472	4.7kΩ	2
	R9, 10	ERDS2TJ473	47kΩ	2
	R11	ERDS2TJ103	10kΩ	1
	R12	ERDS2TJ102	1kΩ	1
	R13	ERDS2TJ103	10kΩ	1
	R16	ERDS2TJ472	4.7kΩ	1
	R17	ERDS2TJ154	150kΩ	1
	R19, 20	ERDS2TJ102	1kΩ	2
	R21	ERDS2TJ104	100kΩ	1
	R22	ERDS2TJ103	10kΩ	1
	R23	ERDS2TJ473	47kΩ	1
	R24	ERDS2TJ472	4.7kΩ	1
	R25~30	ERDS2TJ103	10kΩ	6
	R31	ERDS2TJ472	4.7kΩ	1
	R32	ERDS2TJ473	47kΩ	1
	R33	ERDS2TJ332	3.3kΩ	1
	R34	ERDS2TJ183	18kΩ	1
	R40	ERDS2TJ154	150kΩ	1
	R55	ERDS2TJ681	680Ω	1
	R56, 57	ERDS2TJ472	4.7kΩ	2
	R58	ERDS2TJ155	1.5MΩ	1
	R59	ERDS2TJ334	330kΩ	1
	R60	ERDS2TJ225	2.2MΩ	1
	R62	ERDS2TJ332	3.3kΩ	1
	R63	ERDS2TJ472	4.7kΩ	1
	R64	ERDS2TJ105	1MΩ	1
	R65	ERDS2TJ472	4.7kΩ	1
	R66~69	ERDS2TJ681	680Ω	4
	R99~101 ⚠	ERQ14AJ2R0	2Ω, 1/4W, Fuse Type	3
	R106	ERDS2TJ103	10kΩ	1
	R111, 112	ERDS2TJ103	10kΩ	2
	R114	ERDS2TJ101	100Ω	1
	R201~203	ERDS2TJ103	10kΩ	3
	R216, 217	ERDS2TJ221	220Ω	2
	R233~242	ERDS2TJ221	220Ω	10
	R245~250	ERDS2TJ221	220Ω	6
	R254	ERDS2TJ102	1kΩ	1
	R300	ERDS2TJ103	10kΩ	1
	R301~305	ERDS2TJ221	220Ω	5

	Ref. No.	Part No.	Description	Per/Set
	CAPACITORS			
	C1	ECRR1H104ZF	0.1µF	1
	C2	ECKR1E473ZV	0.047µF	1
	C3~5	ECRR1H104ZF	0.1µF	3
	C7, 8	ECRR1H104ZF	0.1µF	2
	C12	ECCR1H221J	220pF	1
	C14, 15	ECCR1H030C	3pF	2
	C16	ECEA0JKA331	330µF, 6.3V	1
	C17	ECRR1H104ZF	0.1µF	1
	C19	ECEA1HKA010	1µF, 50V	1
	C20	ECKR1E473ZV	0.047µF	1
	C23	ECEA0JKA470	47µF, 6.3V	1
	C24	ECQV1H474JZ	0.47µF	1
	C25, 26	ECRR1H104ZF	0.1µF	2
	C28	ECKR1E473ZV	0.047µF	1
	C31	ECRR1H104ZF	0.1µF	1
	C32, 33	ECEA0JKA470	47µF, 6.3V	2
	C34	ECCR1H471J	470pF	1
	C36	ECCR1H220J	22pF	1
	C37	ECRR1H104ZF	0.1µF	1
	C38	ECKR1E473ZV	0.047µF	1
	C39, 40	ECRR1H104ZF	0.1µF	2
	C41	ECEA1CKN100	10µF, 16V	1
	C42	ECEA1CKA470	47µF, 16V	1
	C67, 68	ECEA1CKA101	100µF, 16V	2
	C69	ECRR1H104ZF	0.1µF	1
	C70	ECEA0JKA221	220µF, 6.3V	1
	C120	ECCR1H101J	100pF	1
	WIRES			
	W1, 2	SWEG660A	Wire	2

ME MIXING & EFFECT CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
	INTEGRATED CIRCUITS			
	IC1	SVIGT74H4051	8-channel Multiplexer	1
S	IC2, 5~7, 11, 12, 22, 23, 29	SVIGM5218L	Operational Amplifier	9
	IC8	SVIGLM1894N	Dynamic Noise Reduction	1
	IC9	SVIGM5241L	Dual VCA	1
	TRANSISTORS			
	Q5	2SC3940ARS	Transistor	1
	Q6	2SA1534ARS	Transistor	1
S	Q7	2SA1015-GR	2SA933STRS (SUB. Part)	1
S	Q8, 9	2SC1815GR	Transistor	2
	DIODE			
	D1	EK04	Diode	1
	RESISTORS			
	R1~9	ERDS2TJ101	100Ω	9
	R27	ERDS2TJ474	470kΩ	1
	R28	ERDS2TJ124	120kΩ	1
	R29	ERDS2TJ154	150kΩ	1
	R30	ERDS2TJ332	3.3kΩ	1
	R41, 42	ERDS2TJ823	82kΩ	2
	R47	ERDS2TJ224	220kΩ	1
	R52~54	ERDS2TJ473	47kΩ	3
	R56, 57	ERDS2TJ104	100kΩ	2
	R58~60	ERDS2TJ473	47kΩ	3
	R64~66	ERDS2TJ104	100kΩ	3
	R67	ERDS2TJ472	4.7kΩ	1
	R68	ERDS2TJ222	2.2kΩ	1
	R69	ERDS2TJ472	4.7kΩ	1
	R70~72	ERDS2TJ333	33kΩ	3
	R73	ERDS2TJ472	4.7kΩ	1
	R74	ERDS2TJ222	2.2kΩ	1
	R75	ERDS2TJ472	4.7kΩ	1
	R76~78	ERDS2TJ333	33kΩ	3
	R80	ERDS2TJ331	330Ω	1
	R83, 84	ERDS2TJ472	4.7kΩ	2
	R85	ERDS2TJ331	330Ω	1
	R86	ERDS2TJ681	680Ω	1
	R89	ERDS2TJ682	6.8kΩ	1
	R90	ERDS2TJ152	1.5kΩ	1
	R91	ERDS2TJ103	10kΩ	1
	R93	ERDS2TJ103	10kΩ	1
	R97	ERDS2TJ333	33kΩ	1
	R98	ERDS2TJ224	220kΩ	1
	R100	ERDS2TJ222	2.2kΩ	1
	R103	ERDS2TJ220	22Ω	1
	R104	ERDS2TJ224	220kΩ	1
	R106	ERDS2TJ224	220kΩ	1
	R107	ERDS2TJ224	220kΩ	1
	R116	ERDS2TJ333	33kΩ	1
	R117	ERDS2TJ124	120kΩ	1
	R119	ERDS2TJ103	10kΩ	1
	R120	ERDS2TJ333	33kΩ	1
	R121	ERDS2TJ124	120kΩ	1
	R146	ERDS2TJ104	100kΩ	1
	R147	ERDS2TJ103	10kΩ	1
	R148	ERDS2TJ333	33kΩ	1
	R149	ERDS2TJ103	10kΩ	1
	R150	ERDS2TJ333	33kΩ	1
	R151	ERDS2TJ103	10kΩ	1
	R154	ERDS2TJ683	68kΩ	1
	R157	ERDS2TJ154	150kΩ	1
	R159	ERDS2TJ104	100kΩ	1
	R211	ERDS2TJ104	100kΩ	1
	R212	ERDS2TJ223	22kΩ	1
	R213, 214	ERDS2TJ473	47kΩ	2
	R215	ERDS2TJ153	15kΩ	1
	R216	ERDS2TJ333	33kΩ	1
	R217	ERDS2TJ223	22kΩ	1
	R250, 251 ⚠	ERD2FCVG100	10Ω, 1/4W, Fuse Type	2
	R300	ERDS2TJ105	1MΩ	1
	R306, 307 ⚠	ERD2FCVJ4R7	4.7Ω, 1/4W, Fuse Type	2
	R311	ERDS2TJ221	220Ω	1
	R316	ERDS2TJ102	1kΩ	1
	R318	ERDS2TJ331	330Ω	1
	CAPACITORS			
	C2	ECEA0JKA470	47µF, 6.3V	1
	C3	ECQG1H332KZ	0.0033µF	1
	C28	ECQM1H103KV	0.01µF	1
	C29	ECKR1E473ZV	0.047µF	1
	C32~39	ECQG1H222KZ	0.0022µF	8
	C40	ECQG1H152KZ	0.0015µF	1
	C41	ECCR1H680J	68pF	1
	C42	ECQG1H152KZ	0.0015µF	1
	C43	ECCR1H680J	68pF	1
	C44	ECRR1H104ZF	0.1µF	1
	C45, 46	ECQG1H152KZ	0.0015µF	2
	C47	ECCR1H681J	680pF	1
	C48	ECQG1H332KZ	0.0033µF	1

Ref. No.	Part No.	Description	Per/Set
C49	ECCR1H681J	680pF	1
C50	ECCR1H101J	100pF	1
C51	ECCR1H680J	68pF	1
C52	ECQG1H332KZ	0.0033µF	1
C53	ECEA1HKA010	1µF, 50V	1
C54	ECQG1H102KZ	0.001µF	1
C55	ECRR1H104ZF	0.1µF	1
C57, 58	ECEA1CU470	47µF, 16V	2
C59	ECKR1E473ZV	0.047µF	1
C60	ECKR1E473ZV	0.047µF	1
C62	ECEA1CU470	47µF, 16V	1
C63	ECEA1HKA010	1µF, 50V	1
C64	ECQG1H472KZ	0.0047µF	1
C65	ECRR1H104ZF	0.1µF	1
C66, 67	ECEA1HKN010	1µF, 50V	2
C80	ECCR1H220J	22pF	1
C84	ECQG1H332KZ	0.0033µF	1
C86	ECQV1H474JZ	0.47µF	1
C87	ECKR1E473ZV	0.047µF	1
C94	ECCR1H101J	100pF	1
C96, 97	ECQG1H102KZ	0.001µF	2
C98, 99	ECCR1H471J	470pF	2
C130	ECQG1H222KZ	0.0022µF	1
C132	ECQG1H472KZ	0.0047µF	1
C133	ECQM1H223KV	0.022µF	1
C134	ECQG1H102KZ	0.001µF	1
C135	ECQM1H103KV	0.01µF	1
C143	ECEA1CU470	47µF, 16V	1
C145	ECEA1CU470	47µF, 16V	1
C147	ECQG1H682KZ	0.0068µF	1
C148	ECQV1H473JZ	0.047µF	1
C150	ECKR1E473ZV	0.047µF	1
C170	ECQG1H222KZ	0.0022µF	1
C171	ECEA1CU331	330µF, 16V	1
C172	ECEA1CU470	47µF, 16V	1
C219	ECQG1H222KZ	0.0022µF	1

JK JACK CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUIT			
IC1	SVIGTLP513	Photo Coupler	1
TRANSISTOR			
S Q1	2SA1015-GR	2SA933STRS (SUB. Part)	1
DIODES			
D1, 2	MA165TA5	Diode	2
COILS			
L1	QLQGT3T150SA	Coil	1
L3, 4	QLQGT2T150SA	Coil	2
JACKS			
JK1, 2	SJSG1370A	MIDI OUT, IN	2
JK3, 4	QJJG003AA	Jack, AUX IN, LINE OUT	2
RESISTORS			
R1	ERDS2TJ221	220Ω	1
R2	ERDS2TJ104	100kΩ	1
R3	ERDS2TJ103	10kΩ	1

Ref. No.	Part No.	Description	Per/Set
R4	ERDS2TJ221	220Ω	1
R5	ERDS2TJ331	330Ω	1
R6	ERDS2TJ101	100Ω	1
CAPACITORS			
C1	ECKR1E473ZV	0.047µF	1
C2	ECEA0JKA470	47µF, 6.3V	1
C3, 4	ECQM1H103KV	0.01µF	2
C5, 6	ECRR1H104ZF	0.1µF	2
C7	ECQM1H103KV	0.01µF	1
C8	ECCR1H221J	220pF	1
C9	ECRR1H104ZF	0.1µF	1

HP HEADPHONES CIRCUIT

Ref. No.	Part No.	Description	Per/Set
COIL			
L1	QLQGT3T150SA	Coil	1
JACK			
JK1	SJJG100A	Jack, Headphones	1
RESISTORS			
R1, 2 ⚠	ERG1ANJP680S	68Ω, 1W, Flame-Proof	2
CAPACITORS			
C1, 2	ECCR1H471J	470pF	2
C3	ECRR1H104ZF	0.1µF	1
WIRE			
W1	QEXGRA01013B	Wire	1

CPSL CONTROL PANEL CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1	SVIGM603A121	Gate Array	1
○ IC2~5	M74LS07FP	Hex Buffers	4
TRANSISTORS			
Q1~4	2SA830SB	Transistor	4
DIODES			
D1~74	MA165TA5	Diode	74
D101~114, 117~127, 129~152, 154~161	LN282R	LED (Red)	57
D115, 116, 128, 153	LN382G	LED (Green)	4
DISPLAY			
LD1	LB603VF	Triple 8 Segments Display	1
COMPONENT COMBINATION			
Z1	EXBPI8103JM	10kΩ×8	1

	Ref. No.	Part No.	Description	Per/Set
	SWITCHES			
	S1~74	SSHG1049A	Push Switch	74
	IC PROTECTOR			
	IP1 ⚠	ICP-N10T104	IC Protector	1
	VARIABLE RESISTOR			
	VR1	EVD06510B24G	20kΩ B, Main Volume	1
	RESISTORS			
	R1	ERDS2TJ184	180kΩ	1
	R2	ERDS2TJ221	220Ω	1
	R3	ERDS2TJ222	2.2kΩ	1
	R4	ERDS2TJ102	1kΩ	1
	R5~8	ERDS2TJ103	10kΩ	4
	R13~34	ERDS2TJ680	68Ω	22
	CAPACITORS			
	C1	ECEA0JKA470	47μF, 6.3V	1
	C2	ECCR1H101J	100pF	1
	C3	ECCR1H101J	100pF	1
○	C4	ECBA1C682MR5	0.0068μF	1
	C5	ECCR1H101J	100pF	1
	C6~8	ECRR1H104ZF	0.1μF	3
	WIRE			
	W1	QEXGRA01015A	Wire	1

ACP POWER SUPPLY CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
	LINE FILTER			
	L1 ⚠	SLTGLF3	Line Filter	1
	JACKS			
	JK1 ⚠	SJVD0203B	AC Inlet	1
	JK2	QJSG002AA	Pedal In	1
	SWITCH			
	S1 EK X ⚠ XS XR XD	SSRG100A	Voltage Selector	1
	FUSES			
	F1 M MC ⚠ XM	XBA1C40NU100	4A, 125V	1
	F1 EK X ⚠ XS XR	XBA2C20TB0	T2A, 250V	1
	F2 XD ⚠	XBA2C12TB0	T1.25A, 250V	1
	F3	XBA2C10TB0	T1A, 250V	1
	F3 Others ⚠	XBA2C12TB0	T1.25A, 250V	1
	CAPACITORS			
	C1 ⚠	ECQU2A104MN	0.1μF, 250V, Across-the Line Capacitor	1
	C2 ⚠	ECKCVA1472MF	4700pF, Line-Capacitor	1
	C3	ECRR1H104ZF	0.1μF	1

	Ref. No.	Part No.	Description	Per/Set
	WIRE			
	W1	SWEG660A	Wire	1
	AC INLET COVER			
	XL XR ⚠	SJS9334A	AC Inlet Cover	1
	Others ⚠	SJS9231A	AC Inlet Cover	1

AS AMP & POWER SUPPLY CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
	INTEGRATED CIRCUITS			
	IC1	SVIGM5291P	Switching Regulator	1
	IC2	SVIGM5F7815	+15V Voltage Regulator	1
	IC3	SVIGM5F7915	−15V Voltage Regulator	1
	TRANSISTORS			
	Q1	2SA1643	Transistor	1
S	Q2	2SA1015-GR	2SA933STRS (SUB. Part)	1
S	Q3, 4, 8	2SC1815GR	Transistor	3
	Q5	2SA1123S	Transistor	1
	Q6	2SD1277A	Transistor	1
	Q7	2SB951A	Transistor	1
	DIODES			
S	D1, 3, 5, 7 ⚠	SVDGS3V20-15	Rectifier	4
○	D9, 10 ⚠	SVDGERA1502	Rectifier	2
	D11	SVDGRK14S	Diode	1
	D12	MA2062LF	Zener, 6.2V	1
	D13, 14	MA165TA5	Diode	2
	D15	MA4062	Zener, 6.2V	1
	COIL			
○	L1	QLCGTJR10KA	Coil	1
	RELAY			
	RL1	SSYGMR30112	Relay	1
	IC PROTECTORS			
○	IP1, 2 ⚠	ICP-N50T104	IC Protector	2
	RESISTORS			
	R1, 2	ERDS2TJ103	10kΩ	2
	R3 ⚠	ERQ14AJ2R0	2Ω, 1/4W, Fuse Type	1
	R4 ⚠	ERX1ANJPR22S	0.22Ω, 1W, Flame-Proof	1
	R5	ERDS2TJ101	100Ω	1
	R6	ERDS2TJ471	470Ω	1
	R7	ERDS2TJ470	47Ω	1
	R8 ⚠	ERG1ANJP221S	220Ω, 1W, Flame-Proof	1
	R9	ER0S2TKF1001	1kΩ, ±1%	1
	R10	ER0S2TKF3571	3.57kΩ, ±1%	1
	R13 ⚠	ERG2ANJP681S	680Ω, 2W, Flame-Proof	1
	R14	ERDS2TJ103	10kΩ	1
	R15	ERDS2TJ472	4.7kΩ	1
	R16	ERDS2TJ103	10kΩ	1
	R17	ERDS2TJ332	3.3kΩ	1
	R18	ERDS2TJ472	4.7kΩ	1
	R19	ERDS2TJ103	10kΩ	1
	R20	ERDS2TJ152	1.5kΩ	1
	R21	ERDS2TJ223	22kΩ	1
	R22	ERDS2TJ102	1kΩ	1

	Ref. No.	Part No.	Description	Per/Set
	R23	ERDS2TJ682	6.8kΩ	1
	R24	ERDS2TJ472	4.7kΩ	1
	R25	ERDS2TJ153	15kΩ	1
	R26, 27	ERDS2TJ222	2.2kΩ	2
	R28, 29 ⚠	ERX2ANJPR22S	0.22Ω, 2W, Flame-Proof	2
	R30 ⚠	ERD25FVJ4R7	4.7Ω, 1/4W, Flame-Proof	1
		CAPACITORS		
	C1 EZ ⚠	ECQE1A104M6	0.1μF, 125V	1
	C2, 3	ECEA1VU332	3300μF, 35V	2
	C6	ECEA1VKG100	10μF, 35V	1
	C7	ECCR1H101J	100pF	1
	C8, 9	ECEA0JU102	1000μF, 6.3V	2
	C15, 16	ECEA1VKG100	10μF, 35V	2
	C17	ECKR1E473ZV	0.047μF	1
	C18	ECEA1HKN010	1μF, 50V	1
	C19	ECQG1H472KZ	0.0047μF	1
	C21	ECEA0JKA470	47μF, 6.3V	1
	C22	ECEA1VKG100	10μF, 35V	1
	C23	ECCR1H101J	100pF	1
	C24	ECCR1H221J	220pF	1
	C25	ECRR1H104ZF	0.1μF	1
	C26	ECEA50Y1R5	1.5μF, 50V	1

MKB MANUAL KEYBOARD CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
		INTEGRATED CIRCUIT		
	IC1	SVIGM74LS138	Decoder	1
		DIODES		
S	D1~44	MA162A	MA150IR (SUB. Part)	44
		SWITCHES		
	S1~7, 38~44	SSPG7001A	Rubber Switch (7pcs. on one)	2
	S8~37	SSPG6001A	Rubber Switch (6pcs. on one)	5
		CAPACITORS		
	C1	ECKR1E473ZV	0.047μF	1
	C2	ECEA0JK470	47μF, 6.3V	1

PKB PEDAL KEYBOARD CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
		TRANSISTORS		
S	Q1, 2, 4	2SA1015-GR	2SA933STRS (SUB. Part)	3
S	Q5~17	2SC2320LFG	2SC1310FG (SUB. Part)	13
		SWITCHES		
	S1~13	SHGG50A	Rubber Switch (5pcs. on one)	3
		RESISTORS		
	R1, 2	ER0S2CKF4700	470Ω, ±1%	2
	R3	ERDS2TJ472	4.7kΩ	1
	R5	ER0S2CKF4700	470Ω, ±1%	1
	R7	ERDS2TJ472	4.7kΩ	1
	R8	ERDS2TJ103	10kΩ	1
	R9	ERDS2TJ472	4.7kΩ	1
	R10	ERDS2TJ103	10kΩ	1
	R11	ERDS2TJ472	4.7kΩ	1
	R12	ERDS2TJ103	10kΩ	1
	R13	ERDS2TJ472	4.7kΩ	1
	R14	ERDS2TJ103	10kΩ	1
	R15	ERDS2TJ472	4.7kΩ	1
	R16	ERDS2TJ103	10kΩ	1
	R17	ERDS2TJ472	4.7kΩ	1
	R18	ERDS2TJ103	10kΩ	1
	R19	ERDS2TJ472	4.7kΩ	1
	R20	ERDS2TJ103	10kΩ	1
	R21	ERDS2TJ472	4.7kΩ	1
	R22	ERDS2TJ103	10kΩ	1
	R23~29	ER0S2CKF4700	470Ω, ±1%	7
	R30	ER0S2CKF1001	1kΩ, ±1%	1
	R32	ERDS2TJ472	4.7kΩ	1
	R33	ERDS2TJ103	10kΩ	1
	R34	ERDS2TJ472	4.7kΩ	1
	R35	ERDS2TJ103	10kΩ	1
	R36	ERDS2TJ472	4.7kΩ	1
	R37	ERDS2TJ103	10kΩ	1
	R38	ERDS2TJ472	4.7kΩ	1
	R39	ERDS2TJ103	10kΩ	1
	R40	ERDS2TJ472	4.7kΩ	1
	R41	ERDS2TJ103	10kΩ	1
	R42~45	ER0S2CKF4700	470Ω, ±1%	4
	R46	ER0S2CKF2201	2.2kΩ, ±1%	1
	R51	ERDS2TJ472	4.7kΩ	1

EXP EXPRESSION CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
		CDS		
	CS1	SVEG5	Light Sensitive Device	1

■ WIRINGT PARTS

	Ref. No.	Part No.	Description	Per/Set
○	W1	QEXGSA04075A	Connector with Wire	1
○	W2	QEXGSS06075A	Connector with Wire	1
○	W3	QEXGSS09070A	Connector with Wire	1
○	W4	QEXGSS13030A	Connector with Wire	1
○	W5	QEXGSS13055A	Connector with Wire	1
○	W6	QEXGSS09080A	Connector with Wire	1
○	W7	QEXGSS06055A	Connector with Wire	1
○	W8	QEXGSS05015A	Connector with Wire	1
○	W9	QEXGVH03125B	Connector with Wire	1
○	W10	QEXGSS12070A	Connector with Wire	1
○	W11	QEXGVH07025B	Connector with Wire	1
○	W12	QEXGVH05025B	Connector with Wire	1
○	W13	QEXGZA08100A	Pedal Cable	1
○	W14	QEXGVH06090B	Connector with Wire	1
○	W15	QEXGSS04090A	Connector with Wire	1
	W16	SWKG0326LTA	Connector with Wire	1
	W17	SWKG04158LSA	Connector with Wire	1
○	W18	QEXGEL03120B	Speaker Code	1
	W19~21 M MC XM EZ XL	SWEG510A	Wire	3

REPLACEMENT PARTS LIST......Upper Cabinet

Notes:

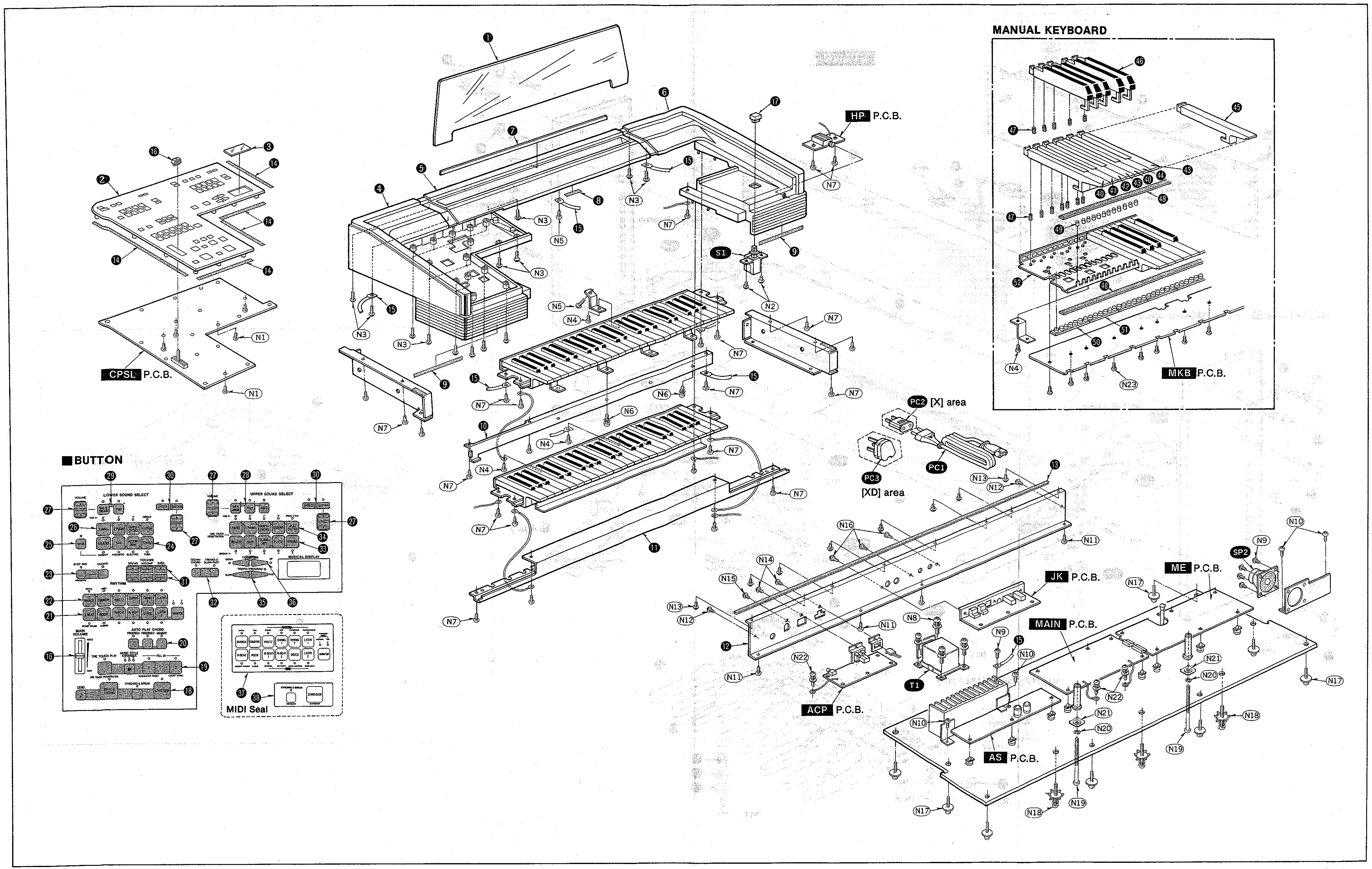
1. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
2. ○ mark are new parts.
3. For part No. with area mark, check the area when placing an order.
4. Keyboard chassis part No. with mark (NLA) is no longer available after production discontinuation of the complete set.

■ CABINET PARTS

	Ref. No.	Part No.	Description	Per/Set
	POWER SWITCH			
	S1 ⚠	SSHG1050A	Power Switch	1
	SPEAKERS			
	SP2	EAS65PH31A	Speaker 6.5cm, 8Ω	1
	TRANSFORMER			
○	T1 M MC XM ⚠	QTPG1M008A	Power Transformer	1
○	T1 EK X XR XS XD ⚠	QTPG1M011A	Power Transformer	1
○	T1 ⚠ Other areas	QTPG1M010A	Power Transformer	1
	POWER CORD & PLUG			
	PC1 EK XS XD ⚠	QJAG001AA	AC Power Cord	1
	PC1 XL XR ⚠	SJAG61	AC Power Cord	1
	PC1 M MC XM ⚠	SJAG62	AC Power Cord	1
	PC1 EN EZ EW EF EP EA EH X ⚠	SJAG65	AC Power Cord	1
	PC2 X ⚠	SJP5213-1	Attachment Plug	1
	PC3 XD ⚠	SJPG1350A	Power Plug	1
	CABINET PARTS			
○	1	QYAG2005AA	Music Rack	1
○	2	QGPG0037AB	Side Control Panel	1
○	3	QKWG005AA	Display Cover Panel	1
○	4	SYWG8152B	Left Cover Panel	1
○	5	SGWG1822B	Front Cover Panel	1
○	6	SYWG8165B	Right Cover Panel	1
	7	SHRGA7320A	Rubber Cushion	1
	8	SHSG1670A	Felt	1
	9	SHSG4930A	Felt	2
○	10	SGXG2481A	Ornament	1
○	11	SGXG2471D	Ornament	1
○	12 EK X XR XS XD	SGXG2497A	Rear Accessory Panel	1
○	12 Other areas	SGXG2496A	Rear Accessory Panel	1
	13	SHSG5550A	Felt	1
○	14	QMFG4061AA	Felt	5
	15	TUX926	Binder	8
	16	SBNG7031A	Knob	1
	17	SBCG110B	Button, Power Switch	1
○	18	QGUG1114AA01	Button	1
○	19	QGUG1115AA01	Button	1
○	20	QGUG1116CA	Button	1
○	21	QGUG1117BA01	Button	1
○	22	QGUG1118BA01	Button	1
○	23	QGUG1119AA	Button	1
○	24	QGUG1120CA01	Button	1
○	25	QGUG1120DA01	Button	1
○	26	QGUG1121BA01	Button	1
○	27	QGUG1122AA01	Button	4

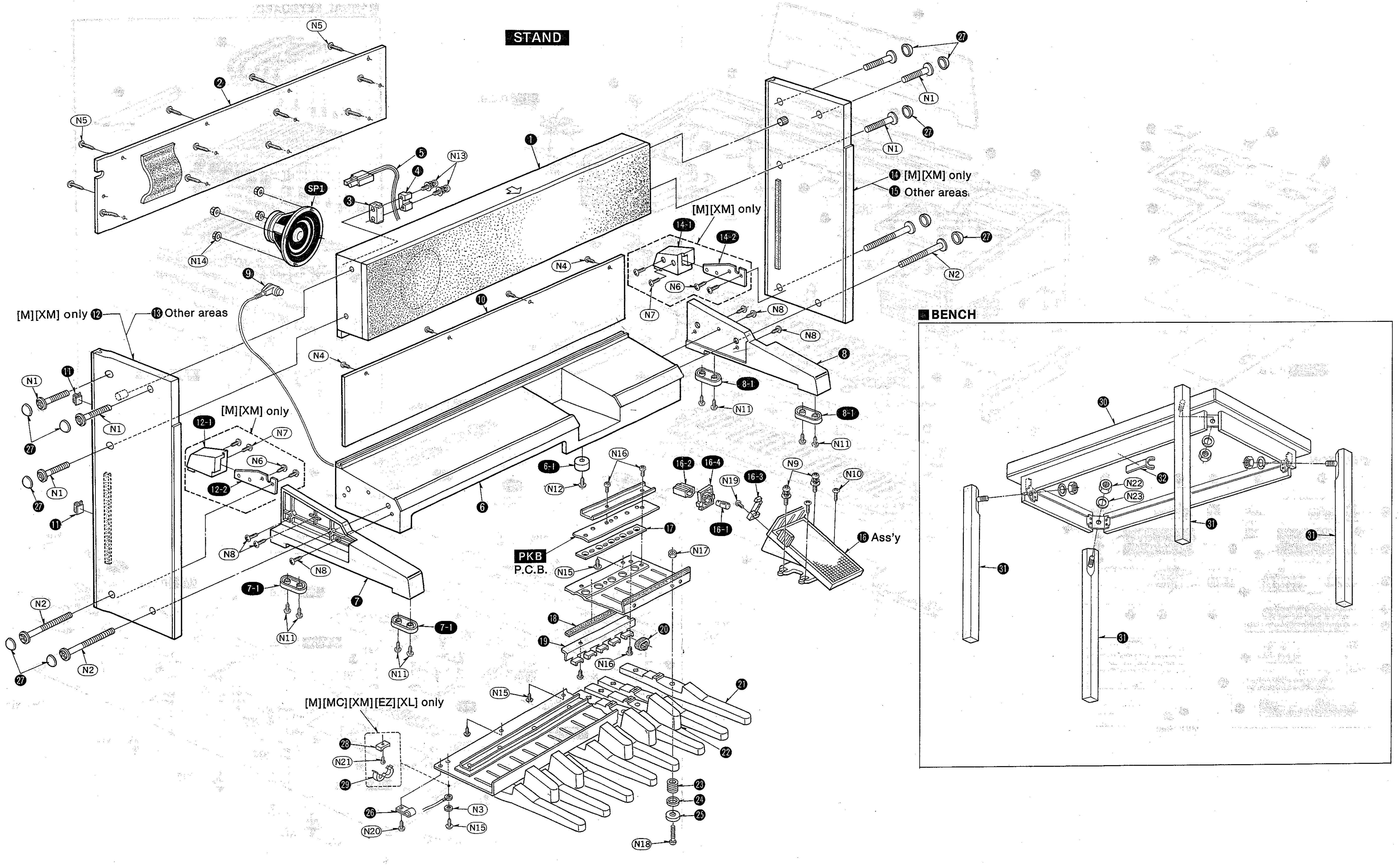
	Ref. No.	Part No.	Description	Per/Set
○	28	QGUG1123AC01	Button	1
○	29	QGUG1123BC01	Button	1
○	30	QGUG1124BA01	Button	2
○	31	QGUG1125AA01	Button	2
○	32	QGUG1126AA	Button	1
○	33	QGUG1127CA01	Button	1
○	34	QGUG1128BA03	Button	1
○	35	QGUG1134AA	Button	1
○	36	QGUG1107AA	Button	1
○	37	QQLG037AB	MIDI Seal	1
○	38	QQLG038AA	MIDI Seal	1
	MANUAL KEYBOARD			
	40	STBG1100A	White Key (C and F Key)	14
	41	STBG1130A	White Key (G Key)	8
	42	STBG1140A	White Key (A Key)	8
	43	STBG1120A	White Key (E and B Key)	14
	44	STBG1110A	White Key (D Key)	6
	45	STBG1150A	White Key (Top Octave C Key)	2
	46	STBG2070A	Black Key	36
	47	SUSG270A	Spring	88
	48	SHSG1931A	Felt	4
	49	SHGG9051A	Key Guide Rubber	88
	50	SSPG7001A	Rubber Switch (7pcs. on one)	4
	51	SSPG6001A	Rubber Switch (7pcs. on one)	10
	52 NLA	STBG6104A	Chassis	1
	SCREWS & WASHERS			
	N1	XTV3+10G	Screw	5
	N2	SNEG740A	Screw	2
	N3	XTW3+14J	Screw	20
	N4	XTB3+5C	Screw	13
	N5	XTW3+10QFVC	Screw	2
	N6	XYN5+C10	Screw with Washer	2
	N7	XTB4+12A	Screw	24
	N8	XYN4+F12	Screw with Washer	4
	N9	XTW3+6J	Screw	5
	N10	XTB35+8A	Screw	4
	N11	XTB35+10AFZ	Screw	4
	N12	XTW3+8JFVC	Screw	2
	N13	XTW3+12QFVC	Screw	8
	N14	XTW3+8JFZ	Screw	2
	N15 EK X XR XS	XTW3+8JFZ	Screw	1
	N16	SNEG1241A	Screw	3
	N17	SNEG1810B	Screw with Washer	8
	N18	QHDG006AA	Screw	3
	N19	XSN5+85FVC	Screw	2
	N20	XWA5B	Washer	2
	N21	SNEG150A	Washer	2
	N22	SNEG2260A	Screw with Washer	3
	N23	XTW3+10T	Screw	12

CABINET PARTS LOCATION



MANUAL KEYBOARD
BUTTON
MIDI Seal
CPSL P.C.B.
HP P.C.B.
MKB P.C.B.
JK P.C.B.
ME P.C.B.
MAIN P.C.B.
ACP P.C.B.
AS P.C.B.
S1
T1
SP2
PC1
PC2 [X] area
PC3 [XD] area
N1
N2
N3
N4
N5
N6
N7
N8
N9
N10
N11
N12
N13
N14
N15
N16
N17
N18
N19
N20
N21
N22
N23
LOWER SOUND SELECT
UPPER SOUND SELECT
VOLUME
RHYTHM
AUTO PLAY CHORD
MAIN VOLUME
MUSICAL DISPLAY
TEMPO/PROGRAM
DEMO
SYNCHRO & BREAK
FILL IN
START/STOP

STAND AND BENCH PARTS LOCATION


STAND
1
2
3
4
5
SP1
6
6-1
7
7-1
8
8-1
9
10
11
[M][XM] only 12
13 Other areas
12-1
12-2
[M][XM] only
14-1
14-2
14 [M][XM] only
15 Other areas
16 Ass'y
16-1
16-2
16-3
16-4
17
18
19
20
21
22
23
24
25
26
27
28
29
PKB
P.C.B.
[M][MC][XM][EZ][XL] only
N1
N2
N3
N4
N5
N6
N7
N8
N9
N10
N11
N12
N13
N14
N15
N16
N17
N18
N19
N20
N21
BENCH
30
31
32
N22
N23

REPLACEMENT PARTS LIST......Stand and Bench

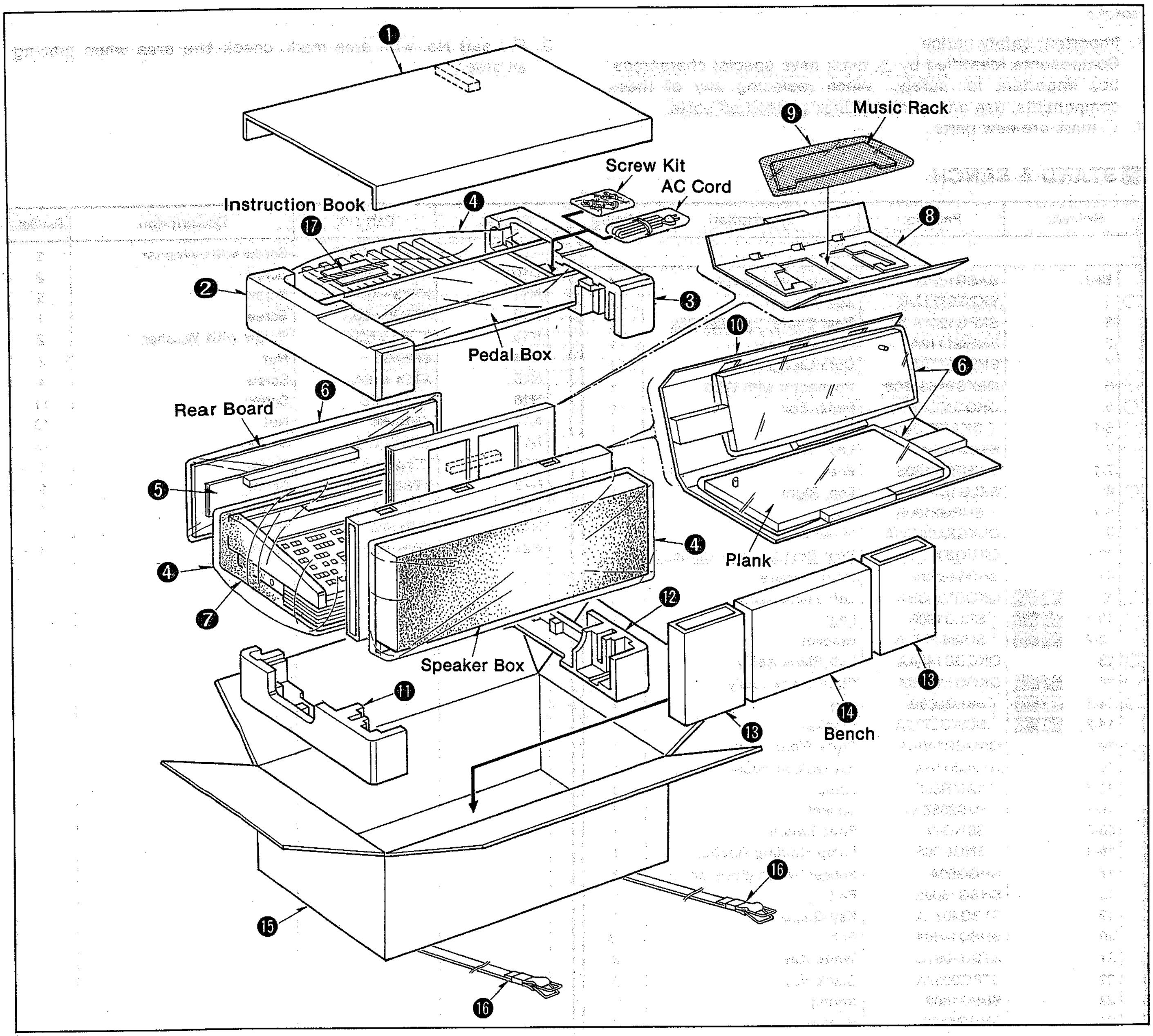
Notes:

1. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
2. ○ mark are new parts.
3. For part No. with area mark, check the area when placing an order.

■ STAND & BENCH

	Ref. No.		Part No.	Description	Per/Set
			STAND		
	SP1		SASG16PL01-F	Speaker, 16cm 4Ω	1
○	1		SKZG9371A-K	Speaker Box	1
	2		SKFG1241A-K	Rear Board, Speaker Box	1
	3		SHRG1110A	Cord Clamper	1
	4		SHRG1120A	Cord Clamper	1
○	5		QEXGEL03120B	Connector with Wire	1
○	6		QKQGM025AAK	Pedal Box	1
○	6-1		QKAG0004AA	Foot	1
○	7		SKLG174B	Leg, Left	1
	7-1		SHRG2130B	Foot	2
○	8		SKLG184B	Leg, Right	1
	8-1		SHRG2130B	Foot	2
○	9		QEXGZA08100A	Pedal Cable	1
	10		QKUG2001AA	Rear Board, Lower Cabinet	1
	11		SHRG9620A	Cord Clamper	2
○	12	M XM	QKQGB148BA	Left Plank Ass'y	1
○	12-1	M XM	SKLG190B	Leg	1
	12-2	M XM	SUWG2771A	Bracket	1
○	13		QKQGB148AA	Left Plank Ass'y	1
○	14	M XM	QKQGB149BA	Right Plank Ass'y	1
○	14-1	M XM	SKLG200B	Leg	1
	14-2	M XM	SUWG2772A	Bracket	1
○	15		QKQGB149AA	Right Plank Ass'y	1
	16		SXVG5110A	Expression Pedal	1
	16-1		XAMR55P	Lamp	1
	16-2		RJS205ZA	Socket	1
	16-3		SSHG14	Foot Switch	1
	16-4		SHGG908	Lamp Holding Rubber	1
	17		SHGG50A	Rubber Switch (5pcs. on one)	3
	18		SHSG1600B	Felt	1
	19		STBG4011A	Key Guide	1
	20		SHSG1460A	Felt	13
	21		STBG1091C	White Key	8
	22		STBG2052A	Black Key	5
	23		SUSG180A	Spring	13
	24		SHGG8130A	Rubber	13
	25		SHRG9240A	Spacer	13
	26		SHRG1230A	Cord Clamper	1
	27		SNEG1760B	Cap	10
	28		SHRG1270A	Mounting Base	1
	29		SLQGTRCC20	Core	1
			BENCH		
○	30		QKQGA033AAK	Seat	1
○	31		QKQGZ044AAK	Leg	4
○	32		QFBG007AA	Spanner	1
			SCREWS & WASHERS		
	N1		SNEG1820A	Bolt	6
	N2		SNEG1720B	Bolt	4
	N3		XWA4B	Washer	1
	N4		XTT4+16AFZ	Screw	4
	N5		XTT35+25AFZ	Screw	12
	N6	M XM	XTS4+20A	Screw	4
	N7	M XM	XST4+20FZ	Screw	4
	N8		XTT4+20A	Screw	6
	N9		XYN4+F20FZ	Screw with Washer	2
	N10		XTT4+16AFZ	Screw	2
	N11		XTV3+16G	Screw	8
	N12		XTB35+20A	Screw	1
	N13		XYN3+F20	Screw with Washer	2
	N14		SNE491	Nut	4
	N15		XTT4+16A	Screw	4
	N16		XTB3+6B	Screw	11
	N17		XNG5BS	Nut	13
	N18		SNEG360A	Screw	13
	N19		XTN26+6B	Screw	1
	N20		XTB35+14A	Screw	1
	N21		XTB3+16A	Screw	1
	N22		XNH10G	Nut	4
	N23		XWB10B	Washer	4

PACKING

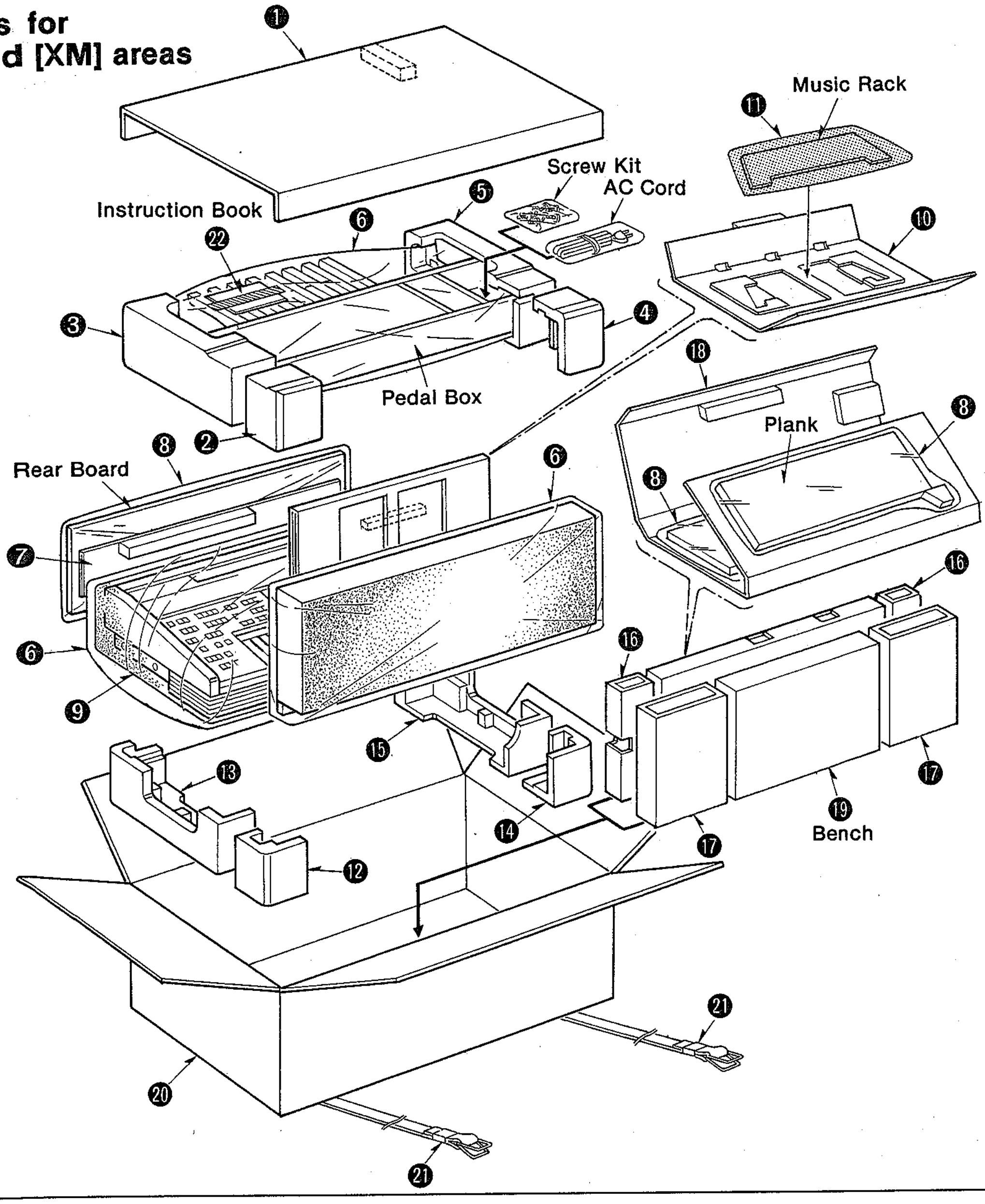

1
9
Music Rack
Screw Kit
AC Cord
Instruction Book
4
17
8
2
3
Pedal Box
10
6
Rear Board
6
5
4
Plank
4
7
12
Speaker Box
11
13
14
Bench
13
16
15
16

■ PACKING PARTS (Except for [M] and [XM] areas)

	Ref. No.	Part No.	Description	Per/Set
	1	SPNG1813B	Top Pad	1
	2	SPNG5648A	Corner Pad	1
	3	SPNG5649A	Corner Pad	1
	4	SPHG1630A	Polyethylene Bag	3
	5	SPNG1839A	Pad	1
	6	SPHG1641A	Polyethylene Bag	3
	7	SPHG1660A	Protection Sheet	1
	8	SPNG1791B	Carton, Music Rack	1
○	9	QPHG039AA	Protection Cover	1
○	10	QPGG0126AA	Carton, Planks	1
	11	SPNG5646A	Corner Pad	1
	12	SPNG5647A	Corner Pad	1
○	13	QPGG0128AA	Pad	2
○	14	QPZGM007A	Packing Case, Bench	1
○	15	QPGG0124AA	Carton	1
	16	SPSG40A	Band	2

	Ref. No.		Part No.	Description	Per/Set
			INSTRUCTION BOOK		
○	17	EN	QQFGEN4AA	Instruction Book	1
○	17	M	QQFGEN4CA	Instruction Book	1
○	17	MC	QQFGEN4DA	Instruction Book	1
○	17	EZ EA	QQFGEN4EA	Instruction Book	1
○	17	EW	QQFGEN4FA	Instruction Book	1
○	17	EF	QQFGEN4GA	Instruction Book	1
○	17	EH	QQFGEN4HA	Instruction Book	1
○	17	EP XM	QQFGEN4JA	Instruction Book	1
○	17	X	QQFGEN4KA	Instruction Book	1
○	17	EK XL XR XS XD	QQFGEN4LA	Instruction Book	1

Products for [M] and [XM] areas


1
Music Rack
11
Screw Kit
AC Cord
Instruction Book
5
6
22
10
3
4
Pedal Box
18
8
2
Plank
Rear Board
8
6
8
7
16
6
16
9
15
13
14
17
19
Bench
12
17
21
20
21

PACKING PARTS (Products for [M] and [XM] areas)

Ref. No.	Part No.	Description	Per/Set
1	SPNG1814B	Top Pad	1
2	SPNG5648B	Corner Pad	1
3	SPNG5648C	Corner Pad	1
4	SPNG5649B	Corner Pad	1
5	SPNG5649C	Corner Pad	1
6	SPHG1630A	Polyethylene Bag	3
7	SPNG1839A	Pad	1
8	SPHG1641A	Polyethylene Bag	3
9	SPHG1660A	Protection Sheet	1
10	SPNG1791B	Carton, Music Rack	1
○ 11	QPHG039AA	Protection Cover	1
12	SPNG5646B	Corner Pad	1
13	SPNG5646C	Corner Pad	1
14	SPNG5647B	Corner Pad	1
15	SPNG5647C	Corner Pad	1
○ 16	QPGG0132AA	Pad	2
○ 17	QPGG0129AA	Pad	2
○ 18	QPGG0127AA	Carton, Planks	1
○ 19	QPZGM007A	Packing Case, Bench	1
○ 20	QPGG0125AA	Carton	1
21	SPSG40A	Band	2
	INSTRUCTION BOOK		
○ 22 M	QQFGEN4CA	Instruction Book	1
○ 22 XM	QQFGEN4JA	Instruction Book	1